

DENTISTRY

Revised Ordinance Governing

BDS DEGREE COURSE AND CURRICULUM - 2011



RAJIV GANDHI UNIVERSITY OF
HEALTH SCIENCES, KARNATAKA



Rajiv Gandhi University of Health Sciences,
Karnataka, Bangalore

The Emblem



The Emblem of the Rajiv Gandhi University of Health Sciences is a symbolic expression of the confluence of both Eastern and Western Health Sciences. A central wand with entwined snakes symbolises Greek and Roman Gods of Health called Hermis and Mercury is adapted as symbol of modern medical science. The pot above depicts Amrutha Kalasham of Dhanvanthri the father of all Health Sciences. The wings above it depicts Human Soul called Hamsa (Swan) in Indian philosophy. The rising Sun at the top symbolises knowledge and enlightenment. The two twigs of leaves in western philosophy symbolises Olive branches, which is an expression of Peace, Love and Harmony. In Indian Philosophy it depicts the Ashwini (the source of all Medicines. The Kundalini (human energy (kundalini) is depicted as "Yadayahu" inside the lotus. The Shanthi Manthra (Om Shanti Shanti Shanti Shrunuyanadev...), which spans the entire span of our lives allotted to us, is the motto of the Rajiv Gandhi University of Health Sciences.

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Revised Ordinance Governing
BACHELOR OF DENTAL SURGERY (BDS)
Degree Course 2011



**RAJIV GANDHI UNIVERSITY OF
HEALTH SCIENCES, KARNATAKA**

4th T' Block, Jayanagar, Bangalore - 560041.

Revised Ordinance Governing
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Degree Course 2011

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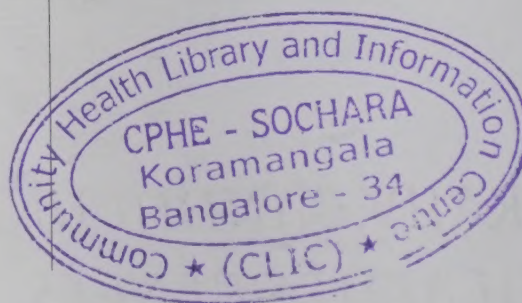
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Rajiv Gandhi University of Health Sciences, Karnataka

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Ref.: UA/Auth/86 SYN/BDS 2007-345/465/2009-10

Date : 20-01-2010

NOTIFICATION

Sub: Revised BDS course Regulations 2007 for 3rd, 4th and 5th year BDS.

- Ref: 1. Notification of Revised BDS course Regulations 2007 published in Gazette of India dated : 10/09/2007.
2. RGUHS Notification No. Auth/Revised BDS Regulations/314/2008-09, dated 15/07/2008.
3. Minutes of the Meeting of Academic Council held on 3rd and 4th December 2009.
4. Minutes of the 86th Meeting of Syndicate held on 08/01/2010.

In exercise of the powers conferred under section 35(1) of Rajiv Gandhi University of Health Sciences Act, 1994, the Syndicate in its meeting held on 08/01/2010 is pleased to notify the ordinance governing Revised BDS Course Regulations 2007 for 3rd, 4th and 5th year BDS as shown in the Annexure appended herewith.

The above ordinance shall come into force with immediate effect.

By order,

Sd/-

Dr. Vasantha Kumar
REGISTRAR

To,

The Principal of All Dental colleges affiliated to RGHHS, Karnataka, Bangalore.

Copy to :

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore - 01.
2. The Principal Secretary to Government, Health & Family Welfare Department, (Medical Education), Vidhana Soudha, Bangalore - 560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore - 560 009.
4. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance officer.
5. Director, Curriculum Development Cell.
6. Public Information Officer.
7. The Home Page of RGHHS Website - <http://www.rguhs.ac.in/Authoritysection/Fellowship.html>.
8. Guard File / Office Copy.



Rajiv Gandhi University of Health Sciences, Karnataka

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Ref.: AUTH/Revised NDS Regulation-314/2008-09

Date : 15-07-2008

NOTIFICATION

Sub: Implementation of Revised BDS Regulations 2007 - Reg.

- Ref: 1. Dental council of India Notification in the Gazette of India dated:10/09/2008.
2. DCI letter No. DE 130-2007/A 7321, dated 01/11/2007.
3. Letter of DME No. MCS/93/2007-08, dated: 07/01/2008.
4. Proceeding of Meeting BOS Dental (UG) in its meeting held on 07/07/2008.
5. Orders of Hon'ble Vice-Chancellor dated 15/07/2008.

In exercise of the powers conferred under section 13(1) of the RGUHS Act, 1994, the Hon'ble Vice-Chancellor is pleased to notify the BDS course Regulations - 2007 and Curriculum of 1st and 2nd year BDS Course as shown in the annexure appended herewith.

The above Ordinance shall come into force the academic year 2008-09 and onwards.

By order,

Sd/-

Dr. Vasantha Kumar
REGISTRAR

To,

All Principal of Dental Colleges affiliated to RGUHS.

Copy to :

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore - 01.
2. Secretary to Government, Health & Family Welfare Department, (Medical Education), Vikasa Soudha, Bangalore - 560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore - 560 009.
4. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance officer.
5. Director, Curriculum Development Cell.
6. Public Information Officer.
7. The Home Page of RGUHS Website. (The Curriculum of 1st and 2nd year BDS course is made available on RGUHS website: www.rguhs.ac.in)
8. Guard File / Office Copy.



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4ನೇ ಟಿ ಬ್ಲಾಕ್, ಜಯನಗರ, ಬೆಂಗಳೂರು - 560 041.

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AUTH/BDS-Regulation/172/2011-12

27/01/2012

Ref. :

NOTIFICATION

Date :

Sub: Implementation of DCI Revised BDS Regulations 2011 - Reg.

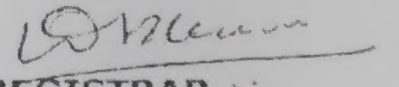
- Ref:1) RGUHS Notification No.AUTH/Revised BDS Regulation-317/2008-09, dated:04/08/2008
- 2) DCI Notification in Gazette of India extraordinary No.DE-130-2011, dated:25/08/2011.
- 3) DCI letter No.DE-130-2011/B.2211, dated:26/08/2011.
- 4) Letter of Dean, Faculty of Dentistry, RGUHS, Bangalore No.DAPM RVDC/928/2011-12, dated: 27/01/2012.
- 5) Orders of Hon'ble Vice-Chancellor dated:28/01/2011.

In exercise of the powers conferred under Section 13(2) of RGUHS Act, 1994, Hon'ble Vice-Chancellor is pleased to order the "Implementation of DCI Revised BDS Course (3rd Amendment) Regulations, 2011" applicable to the students admitted from the year 2008-09. The students appearing the for IV BDS examination are required to appear for examination in the following subjects.

1. Oral Medicine & Radiology
2. Oral & Maxillofacial Surgery
3. Periodontics
4. Prosthodontics Crown & Bridge
5. Conservative Dentistry & Endodontics
6. Community Dentistry
7. Orthodontics
8. Pedodontics

The above Ordinance shall come into force with immediate effect.

By Order,


REGISTRAR

To

Principals of all Dental Colleges affiliated to RGUHS.

Copy to:

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore - 560 001.
2. Principal Secretary to Government, Health & Family Welfare Department, (Medical Education), Vikasa Soudha, Bangalore -560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore - 560 009.
4. Secretary, DCI, Aiwan-E-Galib Marg, Kotla Road, New Delhi - 110002
5. Dean, Faculty of Dentistry, RGUHS, Bangalore
6. Director, Curriculum Development Cell, RGUHS, Bangalore
7. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance Officer.
8. The Home Page of RGUHS Website-
<http://www.rguhs.ac.in/Authoritysection/Fellowship.html>.
9. Office Copy/Guard File.

SECTION I

GOALS OF EDUCATION AND TRAINING IN DENTAL SCIENCE OF RGUHS

The Dental curriculum shall be oriented towards educating students of B.D.S. Course to:

1. Take up the responsibilities of dental surgeon of first contact and be capable of functioning independently in both urban and rural environment.
2. Provide educational experience that allows hands-on-experience both in hospital as well as in community setting.
3. Make maximum efforts to encourage integrated teaching and de-emphasize compartmentalisation of disciplines so as to achieve horizontal and vertical integration in different phases.
4. Offer educational experience that emphasizes health rather than only disease.
5. Teach common problems of health and disease and to the national programmes.
6. Use learner oriented methods, which would encourage clarity of expression, independence of judgement, scientific habits, problem solving abilities, self initiated and self-directed learning.
7. Use of active methods of learning such as group discussions, seminars, role play, field visits, demonstrations, peer interactions etc., which would enable students to develop personality, communication skills and other qualities which are necessary may be done.

Regular periodic assessment be done throughout the course. Examinations be designed with a view to assess not merely the knowledge but also practical and clinical skills, habits and values which are necessary for a graduate to carry out professional day to day work competently.

Towards achieving these goals every Dental College should:

- Evolve institutional objectives, which would be in consonance with the national goals and health policy. The institutional objectives should describe the attributes of their product.
- Shift the role of Dental teachers from merely imparting knowledge to that of a facilitator and motivator of student learning.
- Establish a Dental Education Unit for faculty development, preparation of learning resource materials and for improving evaluation methods.

SECTION II

AIMS AND OBJECTIVE OF BDS COURSE

Aims

The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate should also understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

Objectives

The objectives are dealt under three headings namely (a) knowledge and understanding (b) skills and (c) attitudes.

a. Knowledge and understanding

The graduate should acquire the following during the period of training.

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.
3. Adequate knowledge of clinical disciplines and methods, which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, diagnostic and therapeutic aspects of dentistry.
4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.

b. Skills

A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

1. Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
2. Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.
3. Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help to prevent oral diseases wherever possible.
5. Competent in control of pain and anxiety during dental treatment.

c. Attitudes

A graduate should develop during the training period the following attitudes.

1. Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
4. Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
5. To help and to participate in the implementation of national health programmes.

SECTION *III*

REGULATION RELATING TO BDS COURSE

I. ELIGIBILITY:

Qualifying Examination:

A candidate seeking admission to first BDS course:

- a. Shall have passed the two years Pre-University Examination of Pre-University Board of Karnataka with English and Physics Chemistry and Biology as optional subjects. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually* also
OR
- b. Shall have passed any other examination conducted by Boards/Councils/Intermediate Education established by State Governments/ Central Government and recognised as equivalent to two year Pre University examination by the Rajiv Gandhi University of Health Sciences/Association of Indian Universities (AIU), with English as one of the subjects and Physics, Chemistry and Biology as optional subjects and the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.
OR
- c. Shall have passed Intermediate examination in Science of an Indian University/Board/Council or other recognised examining bodies with Physics, Chemistry and Biology, which shall include a practical test in these subjects and also English as compulsory subject. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.
OR
- d. Shall have passed pre- professional/ pre- medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination. The pre-professional/ pre-medical examination, shall include a practical test in Physics, Chemistry and Biology and also English as compulsory subject.
OR
- e. Shall have passed first year of the three year degree course of a recognised University with Physics, Chemistry and Biology including a practical test in these subjects provided the examination is an 'University Examination' provided that the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually in the pre university or other examinations mentioned in the clauses above.
OR
- f. Shall have passed B.Sc. Examination of an Indian University, provided that he/she has passed the B.Sc. examination with not less than two of the following subjects: Physics, Chemistry, Biology (Botany, Zoology) provided the candidate has passed subjects of English, Physics, Chemistry and Biology individually in the qualifying examinations mentioned in clauses (a), (b) and ©.

1.2 Marks:

The selection of students to dental colleges shall be based on merit provided that:

- a. In case of admission on the basis of qualifying examination, a candidate for admission to BDS course must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology in the qualifying examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes (from Karnataka State Origin only), the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above and must have passing marks in English.
- b. In case of admission on the basis of competitive entrance examination, a candidate must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks in Physics, Chemistry and Biology taken together at the qualifying examination and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes notified by the Government, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above. (Vide Amendment to DCI Regulations, 2007, notified in Gazette of Government of India dated 10.09.2007).

II. Age Requirement:

The candidate shall have completed the age of 17 years at the time of admission or will complete this age on 31st December of the year in which he/she seeks admission.

III. Duration of the Course:

Four academic years with 240 teaching days in each academic year & one year of Internship.

IV. Attendance requirement, Progress and Conduct:

Attendance requirement shall be as follows:

- a. 75% in Theory and 75% in Practical/Clinicals in each subject in each year.
- b. In case of subject in which the instructional programme extends through more than one academic year and hence there is no University Examination in the subject (i.e. non-exam going subjects), the attendance requirement shall not be less than 70% in Theory and Practical/ Clinical. However, at the time of appearing for the professional examination in the subject the candidate should satisfy the condition (a) above.

V. Titles of subjects of study:

First Year

- I. General Human Anatomy including Embryology and Histology.
- ii. General Human Physiology and Biochemistry, Nutrition and Dietetics.
- iii. Dental Anatomy, Embryology and Oral Histology.
- iv. Dental Materials.
- v. Preclinical Prosthodontics and Crown & Bridge.

Second Year

- I. General Pathology and Microbiology.
- ii. General and Dental Pharmacology and Therapeutics.
- iii. Dental Materials.
- iv. Preclinical Conservative Dentistry.
- v. Preclinical Prosthodontics and Crown & Bridge.
- vi. Oral Pathology & Oral Microbiology.

Third Year

- I. General Medicine.
- ii. General Surgery.
- iii. Oral Pathology and Oral Microbiology.
- iv. Conservative Dentistry & Endodontics.
- v. Oral & Maxillofacial Surgery.
- vi. Oral Medicine and Radiology
- vii. Orthodontics & Dentofacial Orthopaedics.
- viii. Paediatric & Preventive Dentistry.
- ix. Periodontology.
- x. Prosthodontics and Crown & Bridge.
- xi. Public Health Dentistry.

Final Year

- I. Orthodontics & Dentofacial Orthopaedics.
- ii. Oral Medicine and Radiology.
- iii. Paediatric & Preventive Dentistry.
- iv. Periodontology.
- v. Oral & Maxillofacial Surgery.
- vi. Prosthodontics and Crown and Bridge.
- vii. Conservative Dentistry & Endodontics.
- viii. Public Health Dentistry.

VI. Teaching Hours

Teaching hours for each subject from first to final year - Theory and Practical are shown in the Tables -I to VI

TABLE - I Subjects and Hours of Instruction (B.D.S Course)

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology, Biochemistry, Nutrition and Dietics	120 70	60 60	--	180 130
3.	Dental Materials	80	240	--	320
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Pharmacology and Therapeutics	70	20	--	90
6.	General Pathology & Microbiology	55 65	55 50	--	110 115
7.	General Medicine	60	--	90	150
8.	General Surgery	60	--	90	150
9.	Oral Pathology and Microbiology	145	130	--	275
10.	Oral Medicine and Radiology	65	--	170	235
11.	Paediatric & Preventive Dentistry	65	--	170	235
12.	Orthodontics & Dental Orthopaedics	50	--	170	220
13.	Periodontology	80	--	170	250
14.	Oral & Maxillofacial Surgery	70	--	270	340
15.	Conservative Dentistry and Endodontics	135	200	370	705
16.	Prosthodontics & Crown & Bridge	135	300	370	805
17.	Public Health Dentistry	60	--	200	260
	Total	1590	1540	2130	5200

Note: There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.

Internship - 240 x 8 Hours = 1920 Clinical Hours.

**TABLE - II Subjects and Hours of Instruction for
First year B.D.S**

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology,	120	60	--	180
3.	Biochemistry, Nutrition and Dietics	70	60	--	130
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Materials	20	40	--	60
6.	Preclinical Prosthodontics and Crown & Bridge	--	100	--	100
	Total	415	685	--	1100

**TABLE - III Subjects and Hours of Instruction for
Second year B.D.S**

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General and Dental Pharmacology and Therapeutics	70	20	--	90
2.	General Pathology	55	55		110
3.	Microbiology	65	50	--	115
4.	Dental Materials	60	200	--	260
5.	Oral Pathology and Oral Microbiology	25	50	--	75
6.	Preclinical Prosthodontics and Crown & Bridge	25	200		225
7.	Preclinical conservative Dentistry	25	200	--	225
	Total	325	775	--	1100

TABLE - IV Subjects and Hours of Instruction for Third year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Medicine.	60	--	90	150
2.	General Surgery.	60	--	90	150
3.	Oral Pathology and Oral Microbiology.	120	80	--	200
4.	Conservative Dentistry & Endodontics.	30	--	70	100
5.	Oral & Maxillofacial Surgery.	20	--	70	90
6.	Oral Medicine and Radiology	20	--	70	90
7.	Orthodontics & Dentofacial Orthopaedics.	20	--	70	90
8.	Paediatric & Preventive Dentistry.	20	--	70	90
9.	Periodontology.	30	--	70	100
10.	Prosthodontics and Crown & Bridge.	30	--	70	100
	Total	410	80	670	1160

TABLE - V Subjects and Hours of Instruction for Fourth year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	Orthodontics & Dentofacial Orthopaedics.	30	--	100	130
2.	Oral Medicine and Radiology.	45	--	100	145
3.	Paediatric & Preventive Dentistry.	45	--	100	145
4.	Periodontology.	50	--	100	150
5.	Oral & Maxillofacial Surgery.	50	--	200	250
6.	Prosthodontics and Crown and Bridge.	80	--	300	380
7.	Conservative Dentistry & Endodontics.	80	--	300	380
8.	Public Health Dentistry.	60	--	200	260
	Total	440	--	1400	1840

VI. Schedule of Examinations

The University shall conduct two examinations annually at an interval of not less than four to six months as notified by the University from time to time.

A candidate who satisfies the requirement of attendance, progress, and conduct as stipulated by the university shall be eligible to appear in the University examination. Certificate to the above effect should be produced from the Head of the Institution along with the application for examination and the prescribed fee.

VII. Scheme of Examination

The scheme of examination of B.D.S. course shall be divided into 5 professional examinations, viz., I.B.D.S. Examination at the end of first academic year, II B.D.S. at the end of second academic year, III B.D.S. at the end of third academic year and IV B.D.S. examination at the end of fourth academic year and V B.D.S. examination at the end of fifth academic year.

VII. i. Internal Assessment

The internal assessment need not be limited to written tests. It should relate to other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in projects and assignments (even) during vacation. These be evaluated objectively and recorded. The weightage given to internal assessment is 10% out of total marks assigned for a subject separately for theory and practical/clinical examinations.

A minimum of three internal assessments to be held in an academic year and the average of these tests shall be sent to the university.

VII. ii. University Examination:

There shall be two examinations annually conducted at an interval of not less than four to six months. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum of 70 marks.

VIII. Type of questions and distribution of marks:

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table VII:

Table - VI

Type of Questions	No. of Questions	Marks of Questions	Total Marks
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
GRAND TOTAL			70

Note: In case of Physiology & Biochemistry and Pathology & Microbiology
The distribution of marks and types of questions will be as follows:

1. In the subject of General Human Physiology and Biochemistry, Section 'A' (Gen. Physiology) shall contain **one** Long essay type question carrying 10 marks and second question containing three short Essay type questions carrying **five** marks each, third question containing **five** Short Answer questions carrying two marks each. Section 'B' (Biochemistry) shall contain **one** Long essay type question of **10** marks and second question containing **three** short Essay type questions of **five** marks each, third question containing five Short Answer type questions carrying two marks each. As shown in Table-VIII.
2. In the subject of Gen. Pathology, Section 'A' (Gen. Pathology) shall contain **one** Long essay type question carrying **10** marks and second question shall contain **three** Short Essay type question carrying **five** marks each, third question containing **five** Short Answer questions of **two** marks each. Section 'B' (Microbiology) shall contain **one** Long essay type question carrying **10** marks and second question shall contain **three** Short essay type questions carrying **five** marks each, third question containing **five** short answer questions of **two** marks each. As shown in Table-IX.

Table - VII

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Physiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			35

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Biochemistry Nutrition and Dietics	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			35

TABLE - VIII

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Pathology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			35

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Microbiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			35

XI. Distribution of Marks in University Examination and Internal Assessment for various subjects from First year to Fifth year is shown in Table X:

TABLE -IX
Distribution of Marks in University Examination and Internal Assessment
for various subjects from First year to Final year :

Subjects	THEORY				PRACTICALS / CLINICALS			Grand Total
	Univer sity Paper	Viva voce	Internal Assess ment	Total	Univer sity exami nation	Internal Assess ment	Total	
I BDS 1. General Anatomy including Embryology and Histology	70	20	10	100	90	10	100	200
2 . Section- A General Human Physiology And Section- B Biochemistry Nutrition and Dietics	35	10	05	50	45	05	50	200
	35	10	05	50	45	05	50	
3. Dental Anatomy, Embryology and Oral Histology.	70	20	10	100	90	10	100	200

II BDS								
Section - A	35	10	05	50	45	05	50	200
1. General Pathology								
Section - B	35	10	05	50	45	05	50	
& Microbiology								
2. General and Dental Pharmacology and Therapeutics	70	20	10	100	90	10	100	200
3. Dental Materials	70	20	10	100	90	10	100	200
4. *Pre-clinical Conservative Dentistry	--	20		20	60	20	80	100
5. *Pre-clinical Prosthodontics * No theory paper, Practical/Viva voce only.	--	20		20	60	20	80	100
III BDS								
1. General Medicine	70	20	10	100	90	10	100	200
2. General Surgery	70	20	10	100	90	10	100	200
3. Oral Pathology and Oral Microbiology	70	20	10	100	90	10	100	200
IV BDS								
1. Oral Medicine and Radiology	70	20	10	100	90	10	100	200
2. Paediatric & preventive dentistry	70	20	10	100	90	10	100	200
3. Orthodontics & Dento-facial orthopaedics	70	20	10	100	90	10	100	200
4. Periodontology	70	20	10	100	90	10	100	200
5. Prosthodontics and Crown and Bridge	70	20	10	100	90	10	100	200
6. Conservative Dentistry and Endodontics	70	20	10	100	90	10	100	200
7. Oral and maxillofacial Surgery.	70	20	10	100	90	10	100	200
8. Public Health Dentistry	70	20	10	100	90	10	100	200

X. Eligibility to appear in University examination:

A candidate who has failed in any one subject only in either I year B.D.S or II year B.D.S or III year BDS or IV year BDS university examination shall be permitted to study class provided that in order to avail the carry over facility such a candidate fulfills the following requirements:

- a. student shall have not less than 75% of attendance in Theory and Practical separately in all the examination subjects prescribed for that year.
- b. should have appeared in all the examination subjects prescribed for that year in the University examination simultaneously.

A Candidate has to pass the carry over subject before being eligible to appear for higher B.D.S Examination.

XI. Criteria for Pass in the University Examination:

1. For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/Clinical examinations separately, as stipulated below :
 - a. For pass in Theory, a candidate shall secure 50% marks in aggregate in University theory examination i.e. marks obtained in University written examination, viva voce examination and internal assessment (theory) combined together i.e. fifty out of One hundred marks.
 - b. In the University Practical/clinical examination, a candidate shall secure 50% marks in aggregate i.e. Practical /Clinical and Internal Assessment combined together i.e. 50/100 marks.
 - c. In case of pre-clinical Prosthetic Dentistry and Pre-clinical Conservative Dentistry in II BDS, where there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University Examination including Internal Assessment i.e. 50/100 marks.
 - d. Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.

XII. Field Programme in Community Dentistry:

As a part of community dentistry program, students in the Clinical years will have to attend the various dental camps/ field programmes as part fulfillment of requirements of BDS examination to the satisfaction of the head of the Institution.

XIII. Miscellaneous:

A. Migration/Transfer of Students

- a. A student studying in a recognized Dental College may be allowed to migrate/ transfer to another recognized Dental College under another/same University provided the candidate has passed I B.D.S. examination.
- b. The migration / transfer can be allowed by the University concerned within one month after the announcement of results of I B.D.S. examination. However, migration or transfer should be avoided in the middle of any year, and in no case before the completion of I BDS examination.
- c. The number of students migrating/ transferring from one Dental College to another Dental College during one year will be kept to the minimum but should not exceed the limit of 5% of its intake subject to a maximum of five students in any one Dental College in one year.
- d. Cases not covered under the above regulations may be referred to the Dental Council of India for consideration on individual merits.
- e. Intimation about the admissions of migrated transferred students into any dental college should be sent to the Dental Council of India immediately.

Note: In cases where a candidate who seeks admission to this university has already completed subject(s), exemption in the subject(s) will be given after admitting the student to the particular year.

B. Re-admission of candidates who discontinued the course:

A candidate who discontinues the course is eligible for re-admission subject to the following conditions:

1. Provision for re-admission is only once during the entire course.
2. He/she should seek readmission within three years from the date of discontinuation of the course.
3. He/she should pay the prescribed fees for the year for which he/she seeks admission and cannot claim readmission on the strength of fees paid earlier.
4. If the candidate discontinues after University Examination, he/she should reappear for the subjects in which he/she failed before seeking admission to the next higher class by paying examination fee etc.
5. He/she should put in two terms of attendance in the class for which he/she seeks readmission before appearing for the University Examination.

SECTION IV

I BDS HUMAN ANATOMY INCLUDING EMBRYOLOGY, OSTEOLOGY & HISTOLOGY

Theory -100 Hrs.

I. Introduction: 10 hrs.

Scope, subdivisions, definitions and interpretation of anatomical terms, planes, anatomical positions, elements of anatomy including fascia muscles, blood vessels, nerves, joints and lymph vessels.

II. Osteology of Head & Neck: 20 hrs.

Skull - exterior - Norma and vault : Interior - Cranial fossae. Individual bones - mandible, maxilla, frontal, parietal, occipital, temporal, zygomatic, ethmoid, sphenoid, vomer, palatine, nasal bones.

Cervical vertebrae in general; C 1, C 2 & C 7 in particular Hyoid bone.

III. Gross Anatomy of Head and Neck: 30 hrs.

- a. Scalp - layers, blood supply, nerve supply, lymphatic drainage.
- b. Face - Muscles, blood supply, nerve supply, lymphatic drainage, lacrimal apparatus.
- c. Neck -
 - i. Cervical fascia
 - ii. Posterior triangle
 - iii. Anterior triangle - submental, digastric, carotid & muscular
 - iv. Midline structures of neck
- d. Cranial cavity - meninges; dural folds and sinuses; Hypophysis cerebri.
- e. Orbit - nerves, vessels, extrinsic muscles of eyeball.
- f. Parotid region - parotid gland.
- g. Temporal and infra-temporal fossae - muscles of mastication, Maxillary artery, maxillary nerve and mandibular nerve.
- h. Temporo-mandibular joint.
- i. Submandibular region - submandibular salivary gland.
- j. Thyroid and parathyroid glands.
- k. Vessels of head & neck - Carotid, subclavian arteries, Internal jugular vein.
- l. Mouth, tongue and palate.
- m. Pharynx.

- n. Larynx.
- o. Cervical part of trachea and oesophagus.
- p. Nasal cavity and para nasal air sinuses.
- q. Lymphatic drainage of head & neck.
- r. Joints of neck - atlanto - occipital, atlanto-axial.

IV. Neuroanatomy: 12 hrs.

- a. Detailed description of cranial nerves - V, VII, IX, X (in the region of head and neck) XI, XII including their nuclei of origin, intra and extra cranial courses.
- b. Cervical spinal nerves and cervical plexus.
- c. Autonomic nervous system of head and neck.

V. Embryology: 12 hrs.

- a. Gametogenesis - spermatogenesis and oogenesis, fertilisation implantation, germ layer formation, fetal membranes and placenta.
- b. Development of branchial apparatus, pharyngeal arches, pouches and clefts.
- c. Development of face, jaws, oral cavity, tongue, palate, nasal cavity, paranasal air sinuses, salivary glands, thyroid gland, hypophysis cerebri, temporo-mandibular joint.

VI. Histology: 16 hrs.

- a. Introduction of cytology and histology.
- b. Basic tissues - epithelial - simple; compound
- c. Connective tissue - cells, fibres - collagen, elastic, reticular
- d. Cartilage - hyaline, elastic, white fibro cartilages,
- e. Spongy and compact bones - TS, LS
- f. Muscular tissue - skeletal, cardiac and smooth,
- g. Nervous tissue - peripheral nerve and ganglia.
- h. Blood vessels - artery & vein.
- i. Glands - serous, mucous, mixed salivary glands.
- j. Lymphoid tissue - lymph node, palatine tonsil, thymus & Spleen.
- k. Skin - hairy and non hairy
- l. Endocrine glands - pituitary, thyroid, parathyroid, suprarenal & pancreas.
- m. Lip, tongue & oesophagus
- n. Trachea and lung.

PRACTICALS

70 Classes of (2 1/2 hrs. each) (175 hrs)

- The following topics are included for examination - MUST KNOW.

Dissection Topics:

1. Scalp
2. Face including deeper dissection
3. Posterior triangle of neck.
4. Anterior triangles of neck -
 - a. median region
 - b. digastric
 - c. Carotid triangles.
5. Deep dissection of neck -
 - a. Thyroid gland
 - b. Great vessels of neck.
6. Parotid region.
7. Infra temporal fossa -
 - a. Muscles of mastication
 - b. Mandibular nerve and its branches
 - c. Maxillary artery
 - d. Temporo mandibular joint
8. Sub mandibular region - gland, hyoglossus and its relations
9. Mouth, palate and pharynx.
10. Nasal cavity and paranasal air sinuses
11. Tongue
12. Larynx

Surface Anatomy: (to be included in practicals only)

MUST KNOW

Superior sagittal sinus; middle meningeal artery; pterion; facial artery; parotid gland and duct; facial nerve on face; common, external, internal carotid arteries; palatine tonsil; vocal cords; thyroid gland, Ext. Jng vein.

Radiological Anatomy: (Practicals only)

AP & Lateral views of head and neck. MUST KNOW Interpretation of normal radiological anatomy.

Histology Slides: - for Practical exam as Spotters & for Discussion.

1. Epithelium - simple squamous (mesentry)
2. Epithelium - simple Cuboidal (thyroid)
3. Epithelium - simple Columnar (Gallbladder)
4. Epithelium - simple Ciliated columnar
5. Epithelium - Pseudo-stratified ciliated columnar (Trachea)
6. Epithelium - Compound stratified squamous kertainised (skin)
7. Epithelium - stratified squamous non keralinised- do -non-keratinised (oesophagus)
8. Compound - transitional (urinary bladder)
9. Areolar tissue.

10. Collagen fibres.
11. Elastic fibres.
12. Tendon.
13. Cartilage - hyaline
 - Elastic
 - White fibrous.
14. Bone - T.S.
 - L.S.
15. Muscle - Skeletal (LS/TS)
 - cardiac
 - smooth.
16. Blood vessels - large sized artery
 - Medium sized artery
 - large vein
 - Medium vein
17. Peripheral nerve & ganglia
18. Serous salivary gland.
19. Mucous Salivary Gland.
20. Mixed Salivary Gland.
21. Lymph node.
22. Palatine tonsil.
23. Thymus
24. Spleen
25. Skin - hairy
26. Skin - non hairy
27. Lip
28. Tooth
29. Tongue
30. Trachea
31. Oesophagus
32. Lung
33. Thyroid & parathyroid
34. Pituitary
35. Suprarenal gland.
36. Pancreas.

Desirable to Know (to be Demonstrated)

1. Ear - external, middle & internal.
2. Spinal cord;
3. Brain Stem
4. Cerebellum
5. Cerebral hemispheres - important gyri & sulci of superolateral, medial and inferior surfaces; functional areas - sensory, motor, auditory, visual, gustatory speech & splanchnic areas; blood supply of brain;
6. Cranial nerves in general with functions other than V, VII, IX, XII.

7. Genetics - definitions, chromosomes, chromosomal aberrations;
8. Anthropology
9. Organs of thorax and abdomen.
10. Extremities - upper & lower limbs
11. Histology of
 - a. Stomach - fundus and pylorus;
 - b. Small intestine - duodenum, jejunum & ileum;
 - c. Large intestine - colon and appendix
 - d. Liver and gall bladder

Scheme of Examination

A. Theory : 70 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
Gross Anatomy of Head and Neck - Scalp, Face, Triangles of Neck, Dural folds and Venous sinuses, contents of the Orbit excluding Eyeball, Parotid Gland, Infratemporal fossa, Temporo mandibular joint, Submandibular region, Thyroid gland, Pharynx, Tongue, Nasal Cavity and paranasal air sinuses. Cranial nerves - V, VII, IX and XII Development of Branchial arches poranecial pouches apparatus, Face. Systemic Embryology and Systemic Histology.	Long Essays 2 x 10 marks	20
Gross Anatomy of Head and Neck - Scalp, Face, Cervical fascia, Midline structures of the neck, Vertebral Joints of Neck, Contents of the Orbit excluding Eyeball, Vessels of Head and Neck, Infratemporal fossa, Mouth, Palate, Pharynx, Nasal Cavity, Cervical Part of Trachea and Oesophagus, Lymphatic drainage of Head and Neck Cranial nerves - V, VII, IX, XI and XII and Cervical Plexus General and Systemic embryology and Histology, Osteology of Head and Neck	Short Essays 08 x 5 marks + Short Answers 05 x 2 marks	40 10
	Total	70

B. Viva Voce : 20 Marks

- a. Osteology of Head and Neck - 05 marks
- b. Soft part from Head and Neck - 05 marks
- c. Embryology Models - 05 marks
- d. Radiological Anatomy - 05 marks

C. Internal Assessment - Theory : 10 Marks, Practical: 10 Marks

D. Practicals : 90 Marks

Gross Anatomy

- a. Spotters carrying 2 marks each 02 x 10 = 20 marks
- b. Discussion on Two given dissected specimens 02 x 10 = 20 marks
- c. Surface Anatomy 10 x 1 = 10 marks

Histology

- a. Identification of 10 Slides of 02 mark each 02 x 10 = 20 marks
- b. Discussion on TWO given slides 10 x 2 = 20 marks
(One General and one Systemic)

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Cunningham's manual of practical Anatomy (Vol-I)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Cunningham's manual of practical Anatomy (Vol-3)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Essentials of Human Anatomy (Head & Neck)	A.K. Dutta	--	1999	Current Books International	Rs. 200/-
Human Embryology	Inderbir Singh	6th	1996	Mc Milan India Ltd. Delhi	Rs. 242/-
Langman's Medical Embryology	Langman	5th	Nov 1994	William & Wilkins Pub. Baltimore, USA	Rs. 899/-
Text Book of Human Histology	Inderbir Singh	3rd	1997	J.P. Brothers Medical Publishers Delhi	Rs. 200/-

Reference Books

Gray's Anatomy	Peter L. Williams	39th	1995	ELBS	£ 40.00
Last's Anatomy Regional and Applied	Mc Minn RMH	10th	1999	Churchill Livingston, Edinburgh	£ 35.00
Grant's Method Anatomy	John V. Basmajian	11th (Ind)	1997	D.I. Publishers	Rs. 725/-
Lee. Mc Gregor's Synopsis of Surgical Anatomy	G.A.G. Decker	12th	--	K.M. Varghese Bombay	Rs. 350/-

General Human Physiology

Theory : 120 Hrs

MUST KNOW		Hours
I.	General Physiology:	4
1.	Cell- Morphology - Functions of organelles: Cell membrane, nucleus, mitochondria, ribosomes, Lysosomes.	
2.	Muscle nerve physiology: Neurons: Morphology, classification Nerve fibres classification, resting membrane potential, action potential, properties, conduction of impulses in myelinated & nonmyelinated fibres.	8
3.	Neuroglia : Types & functions. Muscles: Types, structure of skeletal & smooth muscles, Sarcomere, mechanism of contraction, strength-duration curves, utilization time, rheobase & chronaxie.	
4.	Blood : Composition, properties, functions. RBC; Morphology, functions, count, physiological variations and life span Erythropoiesis - stages, essential factors, regulation.	15
5.	Haemoglobin: Function, concentration, physiological variations Fate of Hb - Jaundice, types. Determination of color index, MCH, MCV, MCHC, PCV - normal values M = Mean, C = Corpuscular, H = Haemoglobin concentration.	
6.	WBCs Morphology, functions of all types including T & B lymphocytes, total and differential counts, physiological variations, leukocytosis & Leukopenia.	
7.	Platelets: Morphology, count, functions, thrombocytopenia & bleeding time.	

	<p>Plasma proteins : Concentrations and functions.</p> <p>Blood groups " Basis of blood grouping, Landsteiner's laws, ABO system, determination of blood groups, blood transfusion, complications of incompatible blood transfusion, RH group, erythroblastosis foetalis, prevention and treatment.</p>	
8.	<p>Haemostasis : mechanisms. Clotting mechanism: factors, intrinsic and extrinsic pathways, Disorders of clotting - haemophilia, vitamin K deficiency. Anti-clotting mechanisms: Antithrombin III, heparin, thrombomodulin & plasminogen, anticoagulants.</p>	
9.	<p>Anaemias: nutritional, aplastic, megaloblastic, iron deficiency. Effects of anaemia.</p>	
10.	<p>Blood volume : Normal values, determination, regulation.</p>	
11.	<p>Lymph : formation, circulation, composition, functions.</p>	
II.	Gastrointestinal System:	10
1.	<p>Salivary secretion : composition, functions, regulation (Deglutition - DESIRABLE TO KNOW).</p>	
2.	<p>Stomach : functions. Gastric juice : composition, functions, regulation, gastrin, gastric emptying time.</p>	
3.	<p>Pancreas : composition, function, regulation of pancreatic juice secretion. Secretion, cholecystokinin - pacreozymin.</p>	
4.	<p>Liver : functions. Bile : composition, functions, Gall bladder: functions, regulation of emptying</p>	
5.	<p>Succus entericus : composition, function, regulation of secretion.</p>	
6.	<p>Movements of small and large intestines. Defaecation.</p>	
III.	Respiratory System :	12
1.	<p>Physiological anatomy of the lungs.</p>	
2.	<p>Definitions of terms used in respiratory physiology : Eupnoea, Hyperpnoea, tachypnoea, apnoea, dyspnoea.</p>	
3.	<p>Mechanics of breathing - intrapulmonary and intrapleural pressure changes during a respiratory cycle.</p>	
4.	<p>Spirometry-lung volumes and capacities. Vital capacity, times vital capacity, maximal voluntary ventilation.</p>	
5.	<p>Dead space : types, measurement of anatomical dead space. Pulmonary & alveolar ventilation.</p>	
6.	<p>Surfactant : production, functions, respiratory distress syndrome. (Ventilation perfusion ration: DESIRABLE TO KNOW)</p>	
7.	<p>Oxygen transport : Oxy Hb dissociation curves, factors affecting it.</p>	
8.	<p>Carbon dioxide transport : forms, chloride shift (Hamburgers phenomenon)</p>	

9.	Regulation of respiration : Neural regulation : centers - Dorsal Group of Respiratory Neurons (DRG), Ventral group of respiratory neurons (VRG), Nuclear Para Brachialis medialis (NPBL), Hering-breuer reflex.	
10.	Chemical regulation : peripheral and central chemoreceptors, ventilatory responses to oxygen lack, carbon-di-oxide and H ⁺ - ions, effect of voluntary hyper ventilation.	
11.	Hypoxia : Types and effects, acclimatization to high attitudes. Cyanosis, asphyxia, Artificial respiration.	
IV.	Cardiovascular System:	15
1.	Plan of CVS Greater and Lesser Circulation. Physiological anatomy of the heart, nerve supply. Origin and spread of cardiac impulse. Structure and properties of cardiac muscle. Cardiac cycle : Intraventricular pressure and volume curves Heart sounds, causes, characteristics and significance Normal ECG, leads causes of waves, P-R interval	
2.	Cardiac output : Definitions, normal values, physiological variations, determination, (Principles underlying the methods only), regulation.	
3.	Arterial blood pressure : Definitions, normal values, physiological variations, factors maintaining blood pressure, Regulation - Vasomotor control, role of afferents to Vasomotor centre (VMC)-baro receptors, Bainbridge reflex, chemoreceptors, hypertension. Heart rate-physiological variations, sinus arrhythmia, Marey law, Bainbridge reflex, chemo receptors, radial pulse.	
4.	Hypovolaemic (Haemorrhagic) shock, physiological basis of signs and symptoms	
5.	Coronary circulation.	
V.	Renal System:	8
1.	Functions of kidneys. Nephrons - cortical & juxtamedullary. Juxta glomerular apparatus - functions.	
2.	Mechanism of urine formation : ultra filtration, GFR - Factors affecting, selective reabsorption- sodium, urea, water, glucose.	
3.	Tubular secretion	
4.	Water excretion, mechanism of urine concentration. Concept of clearance-insulin, PAH & urea clearances. Micturition, Innervation of bladder, cystometrogram, diuresis.	
VI.	Endocrinology:	14
1.	Major endocrine glands. Hormone: definition, properties, mechanisms of action. Anterior pituitary : Hormones and their functions, regulation of each hormone, disorders - Gigantism, acromegaly, dwarfism.	

2.	Posterior pituitary : hormones - site of synthesis, regulation, diabetes insipidus.	
3.	Thyroid : synthesis of hormones, actions and functions, regulation, disorders : simple goitre, myxoedema, cretinism, Graves disease.	
4.	Adrenal cortex : classification of hormones, actions, functions, regulation of secretion of cortisol and aldosterone.	
5.	Adrenal medulla : actions of adrenaline and noradrenaline, regulation of secretion.	
6.	Endocrine pancreas : hormones, actions, functions, regulation of secretion. Regulation of blood glucose level, diabetes mellitus.	
7.	Parathyroids : hormones, actions of hormones, regulation of secretion. Hypo- & hyper parathyroid conditions, tetany - signs. Calcitonin - source, actions.	
8.	Regulation of blood calcium level - Calcitriol.	
VII.	Reproductive Physiology:	06
1.	Male reproductive system : functions of testes, puberty, spermatogenesis, actions of testosterone, regulation of secretion, of semen.	
2.	Female reproductive system : Structure of ovary & Uterus, hormones, actions, regulation. Menstrual cycle, Hormonal basis of changes in menstrual cycle physiological changes during pregnancy. Action of oestrogen and progesterone, Functions of placenta, Lactation, milk ejection reflex.	
3.	Family Planning Methods : In the males : Coitus interruptus, condoms, vasectomy.	
4.	In females: Rhythm method, Intra Uterine Contraceptive Device (IUCD), oral contraceptives, tubectomy.	
VIII.	Nervous System:	10
1.	Synapse : Types, properties Sensory receptors : definition, classification, properties. Reflex action : Definition reflex arc, classification, general properties. Pathways for fine touch, pressure, proprioception, crude touch, thermal and pain sensations, referred pain.	
2.	Spino-cerebellar tracts : pathway and function. Pyramidal tracts: origin, course, termination and functions. Signs of upper & lower motor neurone lesions. Functions of Cerebellum, Basal ganglia, Thalamus, Hypothalamus. Signs of Cerebellar disorders & Parkinson's disease. (Reticular formation, EEG, Sleep (NREM, REM)) Functions of Limbic system, Higher function of Brain - Memory, Learning & Motivation. (DESIRABLE TO KNOW)	
3.	Cerebral cortex : lobes & functions.	
4.	Autonomic nervous system : Organization & functions.	
5.	Cerebrospinal fluid : formation, circulation, composition and function, Lumbar puncture.	

6.	Regulation of body temperature.	
IX.	Special Senses:	18
1.	Vision : physiological anatomy of eye ball, functions of iris, aqueous humor, lens, rods & cones. Accommodation to near vision.	
2.	Refractive errors : Myopia, hypermetropia, presbyopia & astigmatism. Visual acuity, pupillary reflexes.	
3.	Visual pathways.	
4.	Audition : Anatomic consideration, functions of outer, middle & inner ear, cochlea, organ of corti, mechanism of hearing.	
5.	Auditory pathways, deafness - types & tests	
6.	Taste : taste buds, primary taste sensation, pathway for taste sensation	
7.	Smell : receptors, olfactory pathways.	

Practicals :

60 Hours

Sl. No.	To be done by Students :	Hours
1.	Study of Microscope and its uses	02
2.	Collection of blood and study of haemocytometer	02
3.	Haemoglobinometry	02
4.	Determination of RBC count	08
5.	Determination of WBC count	04
6.	Determination of blood groups	02
7.	Leishman's staining and differential leucocyte count	10
8.	Calculation of blood indices	02
9.	Determination of bleeding time	01
10.	Determination of clotting time	01
11.	Blood pressure recording	04
12.	Auscultation of Heart sounds	04

Demonstrations (only)

Sl. No.	To be done by Students :	Hours
1.	Determination of Erythrocyte Sedimentation rate (ESR)	02
2.	Determination of packed cell volume (PCV)	02
3.	Determination of specific gravity of blood	02
4.	Fragility test for RBC	02
5.	Clinical examination of chest	02
6.	Determination of vital capacity	02
7.	Artificial respiration	02
8.	Demonstration of deep and superficial reflexes	02
9.	Activity of frog's heart and effects of Acetyl Choline, Atropine and Adrenaline.	02
	Total	60

DESIRABLE TO KNOW

Transport mechanisms

Neuromuscular junction, excitation contraction coupling, Myasthenia gravis, Rigor Mortis

Body fluid compartments

Principles of measurement, normal values

Blood:

Development of WBC's & platelets

Electrophoresis, Plasma pheresis

Blood bank.

Respiratory system:

Compliance of the lungs

P 50 value, Co-efficient of oxygen utilization

Dysbarism, Dyspnoea - Dyspnoeic index

Non-respiratory function of respiratory system.

Cardio vascular system :

Cardiovascular changes in muscular exercise.

Renal system:

TmG, renal threshold for glucose, tubular load for glucose.

Counter current mechanism

Endocrinology:

Synthesis of thyroid hormone.

Disorders - Addison's disease, Cushings syndrome, Conn's Syndrome,

Adrenogenital syndrome, Pheochromocytoma

Methods of study of endocrine glands.

Central nervous system.

Reflexes - Flexion reflex, stretch reflex, reverse stretch reflex.

Connections of cerebellum, basal ganglia, Thalamus & hypothalamus

Functions of Vestibular apparatus - Reticular formation

EEG - sleep, Wakefulness.

Methods of study of functions of nervous system special senses,

Effects of lesions of visual pathways.

Field of vision, colour vision, colour blindness.

Structure of thyroid, pituitary, pancreas, parathyroid, Adrenal cortex and medulla.

Gastrointestinal function : Deglutition.

Respiratory System: Ventilation perfusion ration.

Nervous system: Reticular formation, EEG, Sleep (NREM, REM), functions of Limbic system, Higher functions of brain - Memory, Learning & Motivation.

Scheme of Examination

A. Theory :

35 Marks

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Long Essay Questions preferably from 1. Blood 2. Gastro intestinal tract 3. Cardio Vascular System 4. Respiratory System 5. Endocrines 6. Reproductive System	Long Essays 01 x 10 marks	10
Short Essay Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Essay 03 X 5 marks	15
Short Answer Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Answers 05 x 2 marks	10
	Total	35 marks

B. Viva Voce

: 10 Marks

C. Internal Assessment - Theory : 05 marks, Practicals

: 05 marks

D. Practicals

: 45 Marks

Major Experiments - 30 Marks

Any one of the Major Experiments

1. R.B.C. Count
2. W.B.C. Count
3. Differential Count
4. Blood Pressure Recording

Minor Experiments - 15 Marks

Any one of the minor Experiments

1. Determination of Blood Groups
2. Determination of Bleeding & Clotting time
3. Haemoglobin Estimation
4. Calculation of absolute Haematological Indices - MCH, MCV, MCHC

Text Books Recommended:

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Text book of Medical Physiology.	Guyton Arthur	09th	1999	Prism & Sounder's Bangalore	Rs.515/-
Concise medical physiology	Chaudhuri Sujit. K	2nd	1998	Central Book Agency Calcutta	Rs.495/-
Human Physiology Vol - I	Chatterjee C. C.	11th	1998	Medical Allied Agency Calcutta	Rs.130/-
Human Physiology Vol - II	Chatterjee C. C.	10th	1998	Medical Allied Agency Calcutta	Rs.120/-

Reference Books:

Review of Medical Physiology	Ganong William. F	18th	1989	Appleton & Lang USA	\$18.00
Physiological basis of Medical practice	Best & Taylor	10th	1999	Willian & Wilkins Hongkong London	\$40.00

Biochemistry, Nutrition and Dietics

Theory: 70 hours

Sl.No	Must Know	Desirable to Know
1.		Introduction to biochemistry and its scope in dentistry. (1 hrs)
2.	Carbohydrates: (4 Hrs.) <ol style="list-style-type: none"> 1. Definition 2. Classification 3. Isomerism of Sugars 4. Physiologically important mono, di and polysaccharides 5. Glycogen, starch, cellulose 6. Mucopolysaccharides – hyaluronic acid, chondroitin sulphate, heparin 	
3.	Amino Acids (6 Hrs.) <ol style="list-style-type: none"> 1. Classification based on structure and nutritional importance 2. Optical activity 3. Isoelectric pH 4. Physiologically active peptides Proteins- <ol style="list-style-type: none"> 5. Definition 6. Functions 7. Classification 8. Structure 9. Denaturation 10. Plasma Proteins and their separation by electrophoresis 11. Immunoglobulins 12. Haemoglobin and its abnormal forms 	Special features and organisation of Proteins, collagen, structure and composition, muscle protein-actin and myosin
4.	Lipids: (4 Hrs.) <ol style="list-style-type: none"> 1. Definition 2. Classification 3. Functions 4. Fatty Acids 5. Neutral Fats 6. Phospholipids 7. Cholesterol 8. Lipoproteins 	
5.	Nucleic Acids : (3 hrs) <ol style="list-style-type: none"> 1. Composition 2. Structure & Types of Deoxy ribonucleic acid (DNA) & Ribonucleic acid (RNA) 3. Nucleosides and Nucleotides and their importance 	

Sl.No	Must Know	Desirable to Know
6.	Vitamins: (8 Hrs.) <ol style="list-style-type: none"> 1. Definition 2. Classification, Chemistry, Sources, Requirement, Function, Metabolic role and Deficiency signs of vitamins: A, D, E, K, C, Thiamin, Riboflavin, Niacin, Pyridoxine, Folic Acid, Cyanocobalamine. .	Genetic Code
7.	Enzymes: (6 Hrs.) <ol style="list-style-type: none"> 1. Definition 2. Classification 3. Chemical nature 4. Enzyme specificity, mechanism of action 5. Properties of enzymes 6. Coenzymes and cofactors 7. Holoenzyme 8. Proenzyme 9. Isoenzyme 10. Factors influencing enzyme activity 11. Enzyme inhibition-types and examples 	Diagnostic enzymes
8.	Carbohydrate Metabolism (8 Hrs.) <ol style="list-style-type: none"> 1. Digestion and absorption of carbohydrates 2. Glycolysis 3. Cori's cycle 4. Citric acid cycle 5. Energetics of glucose oxidation 6. Glycogenolysis 7. Glycogenesis 8. Hexose monophosphate shunt 9. Regulation of blood glucose 	Fermentation, biochemical changes during muscular contraction, electron transport chain, oxidative phosphorylation, respiratory poisons, oxygen toxicity, gluconeogenesis, glycogen storage disorders.
9.	Lipid Metabolism (6 Hrs.) <ol style="list-style-type: none"> 1. Digestion and absorption of lipid 2. Beta oxidation of fatty acids and its energetics 3. Ketone body formation 4. Utilization 5. Ketoacidosis 	Synthesis of palmitic acid and triglycerides, fatty liver, and lipotropic action, metabolism during starvation
10.	Protein Metabolism (8 Hrs.) <ol style="list-style-type: none"> 1. Digestion and absorption of Amino acids 2. Synthesis of Proteins 3. Deamination of Amino acids 4. Transamination 5. Decarboxylation 	Glycine metabolism Synthesis of important products like creatine, noradrenaline, adrenaline, thyroxine, serotonin, heme from amino acids

Sl.No	Must Know	Desirable to Know
	6. Production and fate of ammonia 7. Urea cycle pathway 8. Methionine metabolism 9. Phenylalanine metabolism 10. Phenylketonuria, albinism, Alkaptonuria	
11.	Nutrition and Dietetics (5 Hrs.) 1. Dietary factors 2. Basal metabolic rate 3. Biological value of protein 4. Glucose sparing action 5. Essential amino acids 6. Dietary fibre 7. Essential fatty acids 8. Balanced diet	Principles of calorimetry, Respiratory quotient, Specific Dynamic Action of foods, protein-calorie malnutrition (kwashiorkor and marasmus), nitrogen balance, milk-composition and functions, determination of Basal Metabolic Rate (BMR)
12.	Mineral metabolism (5 Hrs.) Distribution, sources, functions, requirements, absorption, metabolism, effect of deficiencies of 1. Calcium and phosphorus 2. Iron 3. Iodine 4. Fluorine	
13.	Liver Function Tests: (3 hrs) 1. Liver function tests 2. Importance of alkaline phosphatase 3. Galactose tolerance test	Van den Bergh reaction Albumin / Globulin Ratio Bromsulphathalein Excretion test Serum Glutamate Pyruvate Transaminase (SGPT) and other enzymes
14.	pH and its biological importance (2 Hrs.) 1. Acids and bases 2. Buffers 3. Acid base balance 4. Acidosis and alkalosis	Henderson-Hasselbatch equation, role of the kidney in acid base balance.
15.	Renal Function Test (1 Hr.) 1. Urea clearance test 2. Creatinine Clearance	
16.	Blood Constituents (1Hr.) Normal and abnormal variations of 1. Calcium and phosphorous 2. Creatinine 3. Alkaline and acid phosphatase	Normal and abnormal variations of Urea, cholesterol, bilirubin, uric acid, transaminases.

Practicals: 60 hrs

1. Reactions of monosaccharides - glucose & fructose
2. Reactions of disaccharides - lactose, maltose and sucrose.
3. Preparation of osazones from glucose, fructose, lactose & maltose
4. Reactions of polysaccharides - starch
5. Identification of unknown carbohydrate
6. Colour reactions of proteins - albumin.
7. Colour reactions of proteins - gelatin & peptone.
8. Colour reactions of proteins - casein.
9. Precipitation reactions of albumin
10. Precipitation reactions of gelatin and peptone
11. Precipitation reactions of - casein
12. Identification of unknown protein
13. Reactions of urea, uric acid and creatinine
14. Identification of physiologically important constituents.
15. Composition of saliva and starch digestion by salivary amylase.
16. Qualitative analysis of gastric juice - normal and abnormal contents
17. Urine analysis - normal constituents.
18. Urine analysis - abnormal or pathological constituents.
19. Determination of titrable acidity and ammonia content in urine.
20. Determination of creatinine content in urine, calculation of creatinine clearance.
21. Estimation of Blood glucose.

Demonstration Sessions : (Desirable to know)

1. Colorimeter
2. Electrophoresis & Chromatography
3. Estimation of Serum calcium and phosphorus
4. Estimation of Bilirubin
5. Estimation of Urea in blood
6. Estimation of total protein in blood serum
7. Preparation of haemin crystals
8. Discussion of clinical charts - Glucose Tolerance Test (GTT)
9. Spotting of specimens -
Haemin, Osazone - Microscopy, Ryle's tube, Folin -wu tube, Urinometer, Tests - Biuret reaction, Millon's reaction, Jaffe's reaction, Barfoed's reaction.

Scheme of Examination

A. Theory:35 Marks

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Chemistry of Carbohydrates, proteins, lipids and amino acids. Fat soluble and water soluble vitamins. Enzymes. Metabolism of carbohydrates, proteins, lipids and minerals.	Long Essays 01 x 10 marks	10
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents, Biological oxidation.	Short Essay 03 X 5 marks	15
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents.	Short Answers 05 x 2 marks These questions may be selected from both 'must know' and 'desirable to know' category	10
	Total	35 marks

Preferably, 75% of questions can come from the 'must know' category which helps the candidate to pass, remaining may come from 'desirable to know' category, which places him/her in the merit category.

B. Viva - Voce:10 Marks

C. Internal Assessment - Theory : 05 Marks, Practicals : 05 Marks

Internal Assessment (for theory):

- 75% - Questions from MUST KNOW Category
- 25% - Questions from DESIRABLE TO KNOW Category

D. Practicals:**45 Marks**

- | | | |
|--|---|-----------------|
| 1. One procedure for quantitative estimation | = | 20 marks |
| 2. One procedure for qualitative analysis | = | 15 marks |
| 3. Interpretation of Laboratory results in a given chart | = | 10 marks |
| Total | | 45 marks |

The following are suggested:

Quantitative Estimation (Any ONE estimation to be done)

1. Estimation of Blood Glucose - using Folin-wu method, using deproteinized blood.
2. Determination of Creatinine in Urine - using Jaffes's method
3. Determination of Titrable acidity and Ammonia content of Urine - using Malfatti's Method

Qualitative Analysis (Any ONE analysis to be done)

1. Identification of Carbohydrates - glucose, fructose, sucrose, lactose, maltose, starch.
2. Colour Reactions - albumin
3. Precipitation Reactions - albumin
4. Identification of Proteins - albumin, gelatin, casein, peptone
5. Urine Analysis - normal constituents
6. Urine Analysis - pathological constituents

Chart Interpretation (Interpretation of ONE Clinical chart)

1. Glucose Tolerance Test
2. Values of Blood Constituents and their clinical variation: - urea, cholesterol, calcium, phosphorus, bilirubin.

Recommended Books:

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
A Text book of Biochemistry for Dental Students	Harbans lal	1st	1995	CBS Pub. New Delhi	Rs. 130/-
Concise Clinical Medical Biochemistry	Pattabhi raman	--	1986	Prithvi Pub.. Bangalore	Rs. 85/-
Fundamentals of Biochemistry	A. C. Deb	6th	1998	New Central Book Agency Calcutta	Rs. 395/-
Text Book of Biochemistry	AVS Rama Rao	7th	1995	UBSPD with LKS pub. Vishakapatnam	Rs. 135/-
Textbook of Medical Biochemistry	S. Rama krishnan K.G.Prasa nnan R. Rajan	3rd	2001	Orient Longman Hyderabad	Rs. 410/-

Reference Books

Review of Biochemistry	Harpers	24th	1996	USA Appleton and Lange Pub.	US \$ 19.50
Basic and Applied Dental Biochemistry	William R.D & Elliot J.C.	2nd	1990	Singapore Langman Pub.	US \$ 19.50
Principles of Biochemistry	Albert Lehninger	2nd	1993	New Delhi CBS pub.	Rs. 695/-

I BDS

Human Oral and Dental Anatomy, Embryology, Physiology and Histology

Theory - 105 Hrs.

I. DENTAL ANATOMY:	
1. Introduction, Dental Anthropology & Comparative Dental Anatomy	Sl.No. 1 To 4 - 3 Hrs.
2. Function of teeth.	
3. Nomenclature.	
4. Tooth numbering systems (Different system) (Dental formula).	
5. Chronology of deciduous and permanent teeth. (First evidence of calcification, crown completion, eruption and root completion).	2 Hrs
6. Deciduous teeth - a. Nomenclature. b. Importance of deciduous teeth. c. Form & function, comparative dental, Anatomy, fundamental curvature.	4 Hrs.
7. Gross morphology of deciduous teeth.	5 Hrs.
8. General differences between deciduous and permanent teeth.	
9. Morphology of permanent teeth. - Chronology, measurements, description of individual surface and variations of each tooth.	3 Hrs.
10. Morphological differences between incisors, premolars and molars of same arch.	10 Hrs.
11. Morphological differences between maxillary and mandibular. incisors, canines, premolars and molars of the opposite arch.	5 Hrs.
12. Internal Anatomy of Pulp.	1 Hr.
13. Occlusion: a. Development of occlusion. b. Dental arch form. c. Compensating curves of dental arches. d. Angulations of individual teeth in relation to various planes. e. Functional form of the teeth at their incisal and occlusal thirds. f. Facial relations of each tooth in one arch to its antagonist or antagonists in the opposing arch in centric occlusion. g. Occlusal contact and interscusp relations of all the teeth of one arch with those in the opposing arch in centric occlusion. h. Occlusal contact and interscusp relations of all the teeth during the various functional mandibular movements.	8 Hrs.

<p>i. Neurobehavioural aspect of occlusion.</p> <p>Temporo Mandibular Joint (T.M.J.):</p> <ul style="list-style-type: none"> - Gross Anatomy and articulation. - Muscles (Muscles of mastication). - Mandibular position and movements. - Histology. - Clinical considerations with special emphasis on Myofacial Pain Dysfunction Syndrome (MPDS) - (Desirable to Know) 	
ORAL PHYSIOLOGY:	
1. Theories of calcification.	01 hr.
2. Mastication and deglutition.	01 hr.
Oral Embryology, Anatomy and Histology:	
1. Development and growth of face and jaws.	1 hr.
2. Development of tooth.	6 hrs.
3. Cranial nerves with more emphasis on V.VII and IX.	1 hr.
4. Blood supply, nerve supply and lymphatic drainage of teeth and surrounding structures.	1 hr.
5. Cell - structure and function.	1 hr.
6. Maxillary sinus - Structure, Variations, Histology function and clinical considerations.	3 hrs.
7. Salivary Glands - Classification, structure, function, Histology, Clinical Considerations and age changes.	4 hrs.
<p>8. Oral Mucous membrane:</p> <ul style="list-style-type: none"> - Definitions, General consideration. - Functions and classifications. - Structure and microscopic appearance of gingiva, palate, lips, alveolar mucosa, tongue, floor of mouth. - Gingival sulcus and dento gingival junction. - Clinical considerations and age changes. 	8 hrs.
<p>ENAMEL:</p> <ul style="list-style-type: none"> - Physical characteristics, chemical properties structure. - Development - Life cycle of ameloblasts Amelogenesis and Mineralisation. - Clinical considerations. - Age changes. 	8 hrs.
<p>DENTIN:</p> <ul style="list-style-type: none"> - Physical characteristics, chemical properties, structure. - Types of dentin. - Dentin innervation and hypersensitivity. - Development - Dentinogenesis and mineralisation. - Clinical considerations. - Age Changes. 	6 hrs.

PULP : Anatomy, structural features, functions, pulp organs. <ul style="list-style-type: none"> - Developments. - Clinical consideration - Age changes. 	5 hrs.
CEMENTIUM: <ul style="list-style-type: none"> - Physical characteristics, chemical properties, structure. - Cementogenesis. - Clinical consideration - Age changes. 	5 hrs.
PERIODONTAL LIGAMENT: <ul style="list-style-type: none"> - Cells and fibers - Functions - Development - Clinical Considerations. - Age Changes 	5 hrs.
ALVEOLAR BONE: <ul style="list-style-type: none"> - Physical characteristics, chemical properties structure. - Structure - Development. - Internal reconstruction. - Clinical consideration. 	5 hrs.
HISTOCHEMISTRY OF ORAL TISSUES. (Tissue processing) THEORIES OF ERUPTION AND SHEDDING. (Physiological tooth movement)	4 Hrs. 4 Hrs.

PRACTICAL : 250 Hours

Preparation of Ground sections, haematoxylin & Eosin sections & decalcified section - (Desirable to know).

<p>DENTAL ANATOMY:</p> <p>Carving on wax blocks:-</p> <ul style="list-style-type: none">a. Cube, rectangle, cone and cylinderb. Individual tooth - Only permanent teeth of both arches.<ul style="list-style-type: none">- Central, Incisors, Lateral, Canines, Premolars and 1st molar.	
<p>HISTOLOGY:</p> <p>List of Histology slides:</p> <p>Development of tooth:</p> <ul style="list-style-type: none">1. Bud stage of tooth development.2. Cap stage of tooth development.3. Early bell stage of tooth development.4. Late Bell stage of tooth development.5. Root formation.	
<p>ENAMEL :</p> <ul style="list-style-type: none">1. Enamel rod.2. Hunter-Schreger Bands3. Tufts, Lamellae, Spindles.4. Incremental lines of Retzius.5. Neonatal line.6. Gnarled Enamel.	
<p>DENTIN :</p> <ul style="list-style-type: none">1. Dentino - Enamel junction.2. Dentinal Tubules.3. Incremental lines of Von Ebner.4. Contour lines of owen.5. Neonatal line.6. Tomes granular layer.7. Interglobular Dentin.8. Secondary Dentin.9. Intratubular Dentin.10. Intertubular Dentin.11. Dead Tracts12. Tertiary Dentin13. Sclerotic Dentin	
<p>CEMENTUM:</p> <ul style="list-style-type: none">1. Cellular cementum.2. Acellular cementum.	

3. Cemento enamel junction <ul style="list-style-type: none"> - Type 1 - 60% type - Overlapping. - Type 2 - 30% type - Butt - Type 3 - 10% type - GAP type 4. Sharpey's fibers. 5. Hypercementosis. 6. Cementum	
PULP: <ol style="list-style-type: none"> 1. Zones of Pulp. 2. Pulp stones. 	
PERIODONTAL PRINCIPAL LIGAMENT: <ol style="list-style-type: none"> 1. Principal fibers of Periodontal ligament <ul style="list-style-type: none"> - Apical, Horizontal, Oblique, Alveolar crest, Interradicular, Transeptal 	
ALVEOLAR BONE: <ol style="list-style-type: none"> 1. Haversian system. 2. Trabeculated bone. 3. Mature and immature bone. 	
SALIVARY GLANDS: <ol style="list-style-type: none"> 1. Mucous gland. 2. Serous gland. 3. Mixed gland. 	
MAXILLARY SINUS: <p>Sinus lining (Pseudostratified ciliated columnar) (Desirable to know)</p>	
ORAL MUCOUS MEMBRANE: <ol style="list-style-type: none"> 1. Parakeratinised epithelium. 2. Orthokeratinised epithelium. 3. Palate - Anterolateral zone. 4. Palate - Posterolateral zone. 5. Alveolar mucosa. 6. Vermilion border of lip. 7. Tongue - Circumvallate Papillae. <ul style="list-style-type: none"> - Fungiform Papillae - Filiform Papillae 8. Dentogingival junction. 9. Skin 	
Temporo Mandibular Joint (T.M.J.): <ol style="list-style-type: none"> 1. Histological section (Desirable to know). 	

LECTURE DEMONSTRATION :

- 1. Identification of Individual teeth.
 - Deciduous.
 - Permanent.
- 2. Mixed dentition using study models.
- 3. Cross - Section & T.S. of mandible and maxilla with teeth present using study models.
Demonstration of preparation of ground section, Decalcification, Paraffin section & H & E Staining.

Scheme of Examination

A. Theory : 70 Marks
Distribution of Topics and Type of Questions

Contents	Type of Questions and Marks	Marks
A. Dental anatomy - one question - 10 marks B. Dental histology - one question - 10 marks	Long Essays 2 x 10 marks	20
A. Oral histology - five questions - 25 marks B. Dental anatomy - two questions - 10 marks C. Oral physiology - one question - 05 marks	Short Essays 08 x 5 marks	40
A. Oral histology - two questions - 04 marks B. Dental anatomy - one question - 02 marks C. Oral physiology - one question - 02 marks D. Oral embryology - one question - 02 marks	Short Answers 05 x 2marks	10
	Total	70

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks

D. Practicals : 90 Marks

- 1. Carving 30 marks 1 hour 15 min
- 2. Spotters 60 marks (20 spotter x 3 marks) 1 hour 15 min
 - 13 histology and ground section slides
 - 4 tooth identification
 - 3 casts for identifications of teeth, numbering system and age assessment.

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Orban's Oral Histology and Embryology	Orban's	10th	1990	American Publication Ontoria, Canada	Rs. 350/-
Oral Histology - Development, Structure and Functions	A. R. Tencate	5th	1998	Mosby A Harcourt Health Science Company USA	\$ 25.00
Dental Anatomy, Physiology and Occlusion	Wheeler's	7th	1993	Prism Book Pvt. Ltd. Bangalore	Rs. 300/-

REFERENCE BOOK:

- Dental anatomy by Scoot & Simon.
- Oral Physiology by Lavelle.
- Oral Physiology by Jenkins.
- Dental Anatomy by Krauss.
- Dental Anatomy - It's relevance to dentistry 5th edition by Woelfel
- Illustrated Dental Embryology, Histology and Anatomy- 2nd editon By Bath- Balogh

I BDS

DENTAL MATERIALS

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
1.	Introduction: <ol style="list-style-type: none"> Brief History of the development of the science of Dental Materials Aim of studying the subject of Dental Materials. Scope and requirements of Dental materials Spectrum of materials - Classification Clinical and laboratory applications 	01
2.	Structure and behaviour of matter: <ol style="list-style-type: none"> Basic principles - Physical and mechanical properties, Chemical properties, biological properties, rheological properties, thermal properties, light, colour and esthetics. Tarnish and corrosion, surface properties and adhesion, biocompatibility allergy, toxicity, setting reactions. Enamel and Dentine and bone. Polymers Metals and alloys Ceramics Composites Standardisation and assessment of dental materials. 	02
3.	Impression materials and duplicating materials: <ol style="list-style-type: none"> Requirements, classification. Desirable properties, composition, setting properties, advantages, disadvantages, indications and manipulation of inelastic and elastic materials. (Tray compound, impression compound, Low fusing compound, Impression plaster, Zinc oxide Eugenol impression paste, Non Eugenol paste, Alginate, Agar Elastomeric impression materials) Comparative studies between all. 	03
4.	Gypsum products (Detail), die, cast and model materials (including brief account of electroformed dies):	02
5.	Waxes and baseplate materials - Contents, properties, manipulation and uses (Modeling wax, casting wax, boxing wax, utility wax, Sticky wax, impression wax, carding wax, preformed wax patterns	02
6.	Denture base resins <ol style="list-style-type: none"> Tray materials. Temporary base materials - contents, properties, manipulation, advantages and disadvantages. 	02

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
	c. Permanent base resins - types, composition, properties and technical consideration (Flasking, packing, curing, deflasking and processing errors) d. Others - Tissue conditioners, soft liners and hard liners.	
7.	Tooth restorative materials - Classification and ideal properties : a. Dental cements - classification ideal requirements of liners, base and luting cements. Composition, properties, chemistry of setting, manipulation and uses of silicate and silico phosphate cements (in brief), zinc phosphate, zinc polycarbxyate, calcium hydroxide, glass ionomer, modified glass ionomer and resin cement. Comparative studies of mechanical, biological and esthetic properties of all cements.	10
8.	Metals and Alloys - Solidification and microstructure of metals, classification of alloys, relevant physical and mechanical properties, annealing, heat treatment, soldering, welding, fluxes and ant fluxes.	03

Practical Exercises : 40 Hours

II Exercises to be done by each student :

- a. Impression material - 20 hours
Manipulation and making impression and identifying setting time and defects.
(Comparative studies included)
- b. Gypsum products - 20 hours

Recommended Text Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2007	W.B. Sunder's Company, USA	\$35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	4.95 pounds
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	\$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675/-

I BDS

PRE-CLINICAL PROSTHODONTICS AND CROWN AND BRIDGE

Practical: 100 Hours

1. Preparation of special trays
2. Preparation of temporary and permanent denture bases
3. Preparation of occlusion rims
4. Orientation of occlusion rims on articulator
5. Arrangement of teeth
6. Processing of complete dentures

RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edition	Year. of Publ.	Publishers Name Place of Publ.	Price
Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St. Louis, Missouri, USA	\$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	\$ 69
McCracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	\$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA	\$ 35

II Year - BDS

DENTAL MATERIALS

	Theory - 60 Hrs. Practical - 200 Hrs.	
1.	Chemistry of synthetic resins used in dentistry.	02
2.	Dental porcelains - types, composition, role played by each ingredient, manipulation, advantages and disadvantages, aluminous, porcelain, castable porcelain, metal fused porcelain, and porcelain repair materials.	05
3.	Tooth restorative materials - Classification and ideal properties : b. Cavity bases, liners and varnishes. c. Restorative resins - Brief history of resins as tooth restorative materials, filled resins (composite resins) - classification, chemistry of setting, composition, properties, uses, manipulation advantages and disadvantages, acid etching, bonding agents (Enamel and dentin bonding systems), Pit and fissure sealants.	12
4.	Direct filling Gold - types, advantages, disadvantages, brief study of manipulation (cold welding).	03
5.	Silver amalgam alloy - Brief history, classification, composition, role played by each ingredient, setting reaction, properties, manipulation and uses, comparative study of all types of silver amalgams Mercury Hygiene and Toxicity	04
6.	Casting gold alloys - Classification, corrosion, contents and role played by each ingredient, indications, white gold, uses.	03
7.	Dental casting investments - (Refractory materials) Classification, composition, setting reaction, manipulation and technical consideration.	03
8.	Casting procedures and casting defects, in general	04
9.	Base metal casting alloys - properties, composition and uses of Co-Cr, St. steel.	04
10.	Materials used in orthodontia - Luting cements, direct bonding agents, St. Steel, properties and gauges of wires of gold, st. steel, Co-Cr and titanium alloys, brackets, sensitization.	06
11.	Abrasives and polishing agents - a. Clinical b. Laboratory.	04

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
12.	Dental implant materials - History, biological properties and different designs.	02
13.	Miscellaneous - a. Infection control b. Artificial tooth material. c. Separating media d. Die spacers e. Tray adhesives f. Petroleum jelly g. Articulating paper h. Pressure indicating paste i. Endodontic materials j. Comparative studies between metallic and nonmetallic denture base. k. Bioglass l. Sprues m. Setting expansion, hygroscopic expansion, thermal expansion n. Dentifrices.	08

Practical Exercises : 200 Hours

I Demonstration of manipulation of all materials for a batch not more than 8 students.

II Exercises to be done by each student:

- Manipulation and pouring impressions - identify setting time and working time and working time with reference to proportion, water temp, and spatulation time.
- Self-cure and heat cure acrylic resin manipulation and curing.
- Cements - manipulation and studying setting time and working time for luting, base & restoration.
- Silver Amalgam - manipulation, trituration.

Scheme of Examination

A. Theory : 70 Marks

Distribution of Topics and Type of Questions :

Contents	Type of Questions and Marks	Marks
Conservative Dentistry Topics	Long Essays 1 x 10 marks	10
Prosthodontics topics	Long Essays 1 x 10 marks	10
Conservative and Prosthetic topics (Four questions from each subject)	Short Essays 8 x 5 marks	40
Orthodontia*	Short Answers 2 x 2 marks	04
Conservative and Prosthetics topics*	Short Answers 3 x 2 marks	06
	Total	70

* Conservative Specialists to set two short answer questions for Orthodontics & one short answer question for Conservative Subject. Prosthodontic Specialists to set two short answer questions for Prosthodontic Subject.

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 marks, Practicals: 10 Marks

D. Practicals : 90 Marks

1. Spotters: Identify and write the composition and two important uses:

Spotters - 25 Nos.

Marks - 01 Each

Time - 02 Minutes each - 25 Marks

2. Exercise No. 1 - 20 Marks

Any one exercise of the following:

- Manipulation of impression compound and preparation of a plaster cast of U/L arch.
- Manipulation of alginate impression material and preparation of plaster cast of U/L arch.
- Manipulation of Zinc Oxide Eugenol impression paste, and preparation of cast of U/L arch.
- Manipulation of Rubber Base impression material and preparation of Stone cast

3. Exercise No. 2 - 20 marks

Manipulation of any one of the following Dental Cements.

- ZOE (Luting and Filling consistency)
- Zinc Phosphate Cement (Luting and Base consistency)
- Glass Ionomer Cement Type I/II (Luting/Filling consistency)

d. Polycarboxylate Cement (Luting consistency).

(Cements which are mixed for filling consistency should be filled in the cavity prepared in the extracted natural tooth / typhodont.)

4. Exercise No. 3

- 25 marks

- Trituration of Silver Amalgam and Condensation into the cavity prepared in extracted natural tooth/typhodont.
- Mixing to heat cure Acrylic resin and recording of time taken for all stages.

Recommended Text Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2008	W.B. Sunder's Company, USA	\$ 35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	\$ 4.95
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific Pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	\$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675

II B.D.S

PRE-CLINICAL PROSTHODONTICS

THEORY : 25 hrs, PRACTICALS -200 hrs 10 hrs/week]

I. Introduction to Prosthodontics - Scope and Definition	
A. Masticatory apparatus and function: <ol style="list-style-type: none"> 1. Maxillae & Mandible with & without teeth. 2. Muscles of mastication and accessory muscles of mastication. 3. Brief anatomy of TMJ. 4. Mandibular movements. 5. Functions of teeth. 	Must Know 2 hrs
B. Various branches of Prosthodontics and prosthesis: <ol style="list-style-type: none"> 1. Scope & limitation. 2. Appliances v/s prosthesis. 3. Dental prosthesis v/s non-dental prosthesis. 	Must Know 1 hr
C. Effect of loss of teeth: <ol style="list-style-type: none"> 1. On general health. 2. On masticatory apparatus. 3. Need of replace lost teeth. 	Must Know 1 hr
D. Outline of Prosthodontics: <ol style="list-style-type: none"> 1. Types of Prosthesis. 2. Requirements of prosthesis- Physical, biological, esthetic considerations. 	Must Know 1 hr
II. Introduction to components of Prosthesis	
A. Complete Denture Prosthesis: <ol style="list-style-type: none"> 1. Various surfaces (Border and surface anatomy). 2. Components - Base and Teeth. 	Must Know 1 hrs
B. Removable Partial Denture: <ol style="list-style-type: none"> 1. Classification. 2. Major and minor Connectors. 3. Direct retainers. 4. Rests. 5. Indirect retainers. 6. Denture base. 7. Artificial teeth. 	Must Know 2 hrs
C. Fixed Partial Denture: <ol style="list-style-type: none"> 1. Classification. 2. Retainers. 	Must Know 1 hr



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3. Pontics. 4. Connectors.	
III. All related definitions and terminologies from glossary <ul style="list-style-type: none"> • Model • Cast • Impression • Occlusion rim • Temporary denture base • Permanent denture base • Occlusion • Face Bow & Articulator • Jaw relation - orientation, vertical and centric • Christensen's phenomenon • Key of occlusion • Balanced occlusion • Abutment etc... 	Must Know 1 hr
IV. Introduction to mouth preparation - in brief A. Complete Dentures <ol style="list-style-type: none"> 1. General considerations 2. Pre-prosthetic surgery 	Must Know 1 hr
B. Removable partial dentures <ol style="list-style-type: none"> 1. General considerations 2. Occlusal rest preparation 3. Modifying contours of the abutments 4. Guide planes 5. Elimination of undercuts 	Desirable to Know 1 hr
C. Fixed Partial Dentures <ol style="list-style-type: none"> 1. Principles of tooth preparation - in brief 2. Retainers in brief 	Desirable to Know
V. Introduction to all steps involved in fabrication of Prosthesis	Must Know 1 hrs
Clinical Steps in brief and laboratory steps in detail	
Impression Making <ol style="list-style-type: none"> 1. Definition and requirements and types of impressions 2. Various materials used for different impressions 3. Different theories of impression making 	Must Know 2 hrs
Impression Trays <ol style="list-style-type: none"> 1. Definition, classification, materials, advantages and disadvantages 2. Selection of trays 3. Special trays 4. Spacer design 	Must Know 1 hr

Introduction to jaw relation record <ol style="list-style-type: none"> 1. Definition and type 2. Temporary denture base - Indications, Advantages, Disadvantages, materials used 3. Occlusion rims - materials, shape, dimensions 4. Clinical procedures of jaw relation recording in brief 	Must Know 2 hrs.
Articulators and face bow <ol style="list-style-type: none"> 1. Basic out line 2. Need for articulators 3. Definition, classification, parts, advantages, disadvantages of articulators 4. Definitions, classification, parts, advantages, disadvantages and purpose of face bow transfer 5. Demonstration of face bow transfer to an articulator on a dummy 	Must Know 2 hrs.
Selection of Teeth <ol style="list-style-type: none"> 1. Various guidelines for selection of teeth including dentogenic concept 2. Arrangement of teeth in detail with various factors of esthetics, overjet, overbite etc 	Must Know 1 hr
Occlusion <ol style="list-style-type: none"> 1. Balanced Occlusion - need and advantages 2. Various factors of balanced occlusion 	Must Know 1 hrs
Try in Procedures <ol style="list-style-type: none"> 1. Anterior try - in 2. Posterior try - in 3. Waxing, carvin, polishing and final try - in 	Must Know 1 hr
Processing Procedures <ul style="list-style-type: none"> • Flasking • Dewaxing • Packing • Curing • Finishing and polishing of acrylic dentures 	Must Know 1 hr
VI. Casting Procedures <ul style="list-style-type: none"> • Preparation of die • Wax pattern • Investing • Burnout • Casting • Finishing and polishing 	Desirable to Know 1 hrs

II BDS
PRACTICAL EXERCISES 200 hours

1. Arrangement of teeth - Must Know
2. Surveying of partially edentulous models and preparing modified master cast - Desirable to Know
3. Preparing of was patterns spruing, casting and finishing (in batches of students not more than 8)
 - Desirable to Know
4. Preparation of plaster models of various preparation of teeth to receive retainers for FPD
 - Desirable to Know
5. Prepare wax patterns for minimum of 3 unit FPD and investing, casting and porcelain facing (for Batch of 8 students) - Desirable to Know

- Note:
1. Students shall submit one processed denture mounted on an articulator to present on university practical exam along with record book.
 2. Exercises of RPD and FPD to be submitted in groups along with the record book.

Scheme of Examination

- A. Practical Exercise: (Duration- 3 hrs) : 60 Marks**
 Arrangement of teeth in class I relation, Waxing, Carving, Polishing
- B. University Viva-Voce : 20 Marks**
- C. Internal Assessment : 20 Marks**

RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Boucher	Prosthodontic Treat ment of Edentulous Patients	XI	1997	Mosby St.Louis, Missouri,USA	\$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	\$ 69
Mc Cracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	\$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby St. Louis Missouri,USA	\$ 35

II BDS

PRE-CLINICAL CONSERVATIVE DENTISTRY

Theory : 25 Hours

Sl. No.		
1.	Introduction to Conservative Dentistry.	1 hour
2.	Definition, Aim & Scope of Conservative Dentistry & Endodontics	
3.	Classification of Cavities.	1 hour
4.	Nomenclature.	
5.	Various chair side positions.	1 hour
6.	Tooth Numbering.	
7.	Restoration - Definition & Objectives	
8.	Instruments - Classification, Nomenclature, Design, Formula of hand cutting instruments, Care, Grasps and Rests.	4 hours
9.	Rotary Cutting instruments - Burs, Design & use. Various speeds in Cavity preparation.	2 hours
10.	Principles of cavity /Tooth preparation for :	5 hours
	a. Silver Amalgam	
	b. Cast gold inlay	
	c. Composite resins.	
	d. Glass Ionomer	
11.	Matrices, Retainers, Wedges.	2 hours
12.	Separators - different methods of separation.	2 hours
13.	Finishing & polishing of restorations.	1 hours
14.	Management of deep carious lesions - pulp capping and pulpotomy.	3 hours
15.	Access cavity and brief introduction of root canal instruments.	3 hours

PRACTICAL EXERCISES - 200 Hours

Preparation of 1" cube in Plaster of paris - 6 Nos.

Preparation of geometric cavities in the above cubes.

Preparation of Tooth models in plaster and preparation of cavities and restoration with modeling wax.

a. Incisors - 4 Nos.

b. Pre-Molars - 2 Nos.

c. Molars - 8 Nos.

30 Hours

Preparation of Cavities on Typhodont and/or Extracted Natural Teeth

I. CAVITIES	PREPARATION	RESTORATION	
Class I	6 with 2 extensions	4	25 Hours
Class II	5 DO Conventional	8	25 Hours
	5 MO		
	5 Conservative	4	15 Hours
	2 MOD (1 Upper molar)	1	15 Hours
	(1 Lower Molar)		
Class III	3	All	15 Hours
Class V	3 on Anteriors	All	15 Hours
	2 on Posteriors	All	15 Hours

II. INLAY PREPARATION :

Class I	1	To prepare Wax patterns	15 Hours
Class II	2+1 MOD	To prepare wax patterns and one to be casted	
Class V	1 (posterior)		

III. CUSPAL PREPARATION : (Demonstration)

- IV. a. Pulp capping : Direct/ Indirect on extracted teeth
- b. Pulpotomy on extracted posterior teeth
- c. Root canal access cavity opening on Upper Central incisor.
(Extracted Tooth)
- V. Demonstration of Light cure composite and Glass Ionomer Restorations.
- VI. Demonstration of Instrumentation and Obturation of root canal.
- VII. Demonstration - Wax pattern, investing, casting, polishing and cementation of cast restoration.

NOTE: The II year student should complete the prescribed quota of work before appearing for final internal assessment for the subject. This should be certified by the Head of the department before the candidate takes up final internal assessment exam.

Scheme of Examination

A. University Practicals : 60 Marks

Practical Exercise No.1 : 10 Marks

Spotters : 10 Nos., Marks : 01 Each, Time : 02 Minutes Each

Spotters

- a. Hand instruments used to prepare cavity and restoration
- b. Identification of Root Canal Instruments

Practical Exercise No.2 : 50 Marks

Preparation of Class II Conventional Cavity for Silver Amalgam in Maxillary or Mandibular I or II Molar tooth (Typhodont/Natural Tooth)

Cavity preparation	45 Minutes	25 Marks
Lining and Matrix	15 Minutes	10 Marks
Filling and carving	30 Minutes	15 Marks

B. University Viva-Voce : 20 Marks

C. Internal Assessment : 20 Marks

Total : 100 Marks

TEXT BOOKS RECOMMENDED :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
The Art & Science of Operative Dentistry	Sturdevant	3rd	1997	Mosby, USA	\$ 30.00
Principle & Practice of Operative Dentistry	Charbeneu	3rd	1989	Varghese Publication, Bombay	Rs. 315/-
Endodontic Practice	Grossman	--	1988	Varghese Publication, Bombay	Rs. 323/-

II BDS

GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

Theory: 70 Hrs.

Sl. No.		
1.	General Pharmacology : a. Definitions : Pharmacology, drug, Pharmacy, sources of drugs with examples.	1 hour
	b. Pharmacokinetics with clinical implications.	2 hours
	c. Routes of administration : oral, inhalation, intradermal, Subcutaneous, intramuscular, intravenous intrathecal, perineural & Newer drug regimes (Advantages and disadvantages with the examples of drugs administered).	1 hour
	d. Pharmacodynamics : mechanism of action, factors modifying drug actions with emphasis on factors like - age, sex, dose, frequency & route of administration, presence of other drugs, Pharmacogenetics and Pathological conditions.	2 hours
	e. Therapeutics : Principles of drug therapy, Adverse drug reactions and drug interactions.	3 hours
2.	ANS drugs : Clinically used examples, their important pharmacological actions (which form the basis for the uses), clinical uses along with dental uses if any and specific adverse effects of - a. Sympathomimetics b. Sympatholytics - alpha blockers, Beta - blockers. c. Cholinomimetics. d. Anticholinergics.	1 hour 2 hours 2 hours 2 hours
3.	Detailed pharmacology of : A. a. Clinically used opiod and non-opiod analgesics. b. Clinically used local anesthetics.	2 hours 2 hours
	B. Enumeration of clinically used agents, their brief Pharmacology, clinical uses along with dental uses if any, and specific adverse effects of : a. Ethyl alcohol - actions, uses and drug interactions.	1 hour
	b. General anesthetics	2 hours
	c. Preanaesthetic medication.	
	d. Antipsychotics, antidepressants, anxiolytics.	2 hours
	e. Sedative hypnotics	2 hours
	f. Antiepileptics	1 hour

4.	CVS drugs : Enumeration/Classification of clinically used agents their important pharmacological actions (that form the basis of their uses) Clinical uses along with dental uses if any, and specific adverse effects of :	
	a. Cardiac glycosides	1 hour
	b. Antianginal drugs	1 hour
	c. Antihypertensives	1 hour
	d. Diuretics	1 hour
	e. Pharmacotherapy of shocks - anaphylactic, cardiogenic hypovolemic & Septic.	1 hour
5.	Drugs acting on blood : Detailed pharmacology of :	
	a. Coagulants, anticoagulants, fibrinolytics, anti platelet drugs and styptics	3 hours
	b. Hematinics : Iron preparation Vit.B12, Folic acid Vit. C	3 hours
	c. Vit.D and calcium preparations.	1 hour
6.	Endocrines : Enumeration/Classification of clinically used agents and their preparations, Mechanism of action, clinical uses along with dental uses if any and specific adverse effects of:	
	a. Drugs used in diabetes mellitus	2 hours
	b. Corticosteroids	2 hours
7.	Chemotherapy : Enumeration/Classification of clinically used Agents, their mechanism of action clinical uses along with dental uses if any and specific adverse effects of:	
	a. Sulfonamides	1 hour
	b. Beta-lactum antibiotics	2 hours
	c. Macrolides and aminoglycosides	1 hour
	d. Broad spectrum antibiotics	1 hour
	e. Antifungal and antiviral (acyclovir) agents.	2 hours
	f. Metronidazole and fluoroquinolones	1 hour
	g. Antineoplastic Drugs: Alkylating agents, Antimetabolites, Radio active Isotopes, Vinka Alkaloids, Anti Cancerous antibiotics.	2 hours
	h. Drug Therapy of Tuberculosis, Leprosy & Malaria.	3 hours
8.	Other drugs : Enumeration of clinically used agents, general uses along with dental uses if any and specific adverse effects of :	
	a. Antihistamines and antiemetics	2 hours
	b. Drugs used in bronchial asthma and cough	1 hour
	c. Drugs used in peptic ulcer	2 hours
	d. Chelating agents - BAL, EDTA & Penicillamine.	1 hour
	e. Anthelmenthics	2 hours

9.	Dental Pharmacology	
	A. a. Fluoride pharmacology	1 hour
	b. Antiseptics, astringents & Sialogogues	1 hour
	c. Obtundents, Mummifying agents and disclosing agents.	1 hour
	B. Prevention and drug therapy of emergencies in dental practice.	2 hours
	a. Seizures	
	b. Anaphylaxis	
	c. Severe bleeding	
	d. Shock	
	e. Tetany	
	f. Status asthmaticus	
	g. Acute addisonian crisis	
	h. Diabetic Ketoacidosis	

PRACTICALS : 20 Hrs.

1.	Introduction - equipments used in dispensing pharmacy, prescription - parts and model prescription.	2 hours
2.	Demonstration of common dosage forms used in clinical practice.	2 hours
3.	Mixtures - one example (Expectorant/Salicylate) of simple and diffusible (Bismuth Kaolin/chalk) mixtures.	2 hours
4.	Emulsion - Types and example (Liniment turpentine / Shark liver oil) of emulsion.	2 hours
5.	Powders - tooth powder	2 hours
6.	Mandl's paint/Gum paint percentage dilution - concept and calculations with suitable examples.	2 hours
7.	Mouth washes - Alkaline, antiseptic, astringent.	2 hours
8.	Tooth pastes	2 hours
9.	Prescription writing for 15 general conditions commonly encountered in clinical practice. eg. Bronchial asthma, hypertension congestive heart failure, angina pectoris, peptic ulcer, bacillary dysentery, pseudomembranous colitis, diabetes mellitus, diabetic coma osteoarthritis, anaphylaxis, status asthmaticus, Status epilepticus, iron deficiency & pernicious anaemia.	2 hours
10.	Dental prescriptions for about fifteen dental conditions commonly encountered in practice eg. Acute necrotising ulcerative. gingivitis, acute herpetic gingivitis/stomatitis, acute gingival abscess, pericoronal abscess (impacted teeth), dental caries, aphthous ulcers, hypersensitive dentine, dentoalveolar abscess, xerostomia, acute tooth ache, post operative pain, post extraction pain with swelling, oral candidiasis, scurvy etc.	2 hours

Scheme of Examination

A. Theory (Written) Examination : 70 Marks

Type of questions, topics and marks distribution

Contents	Type of Questions and Marks	Marks
Topics to be covered : One long essay from dental pharmacology Second long essay from: <ul style="list-style-type: none"> - Pharmacokinetics - Pharmacodynamics - Antibiotics - NSAIDS - Local anesthetics - Anti coagulants - Beta blockers - Glucocorticoids - Calcium channel blockers - ACE Inhibitors - Opioid Analgesics - Sympathomimetics - Anti-Cholinergics - Cardiac Glycosides 	Long Essay 2 x 10 = 20 marks	20
For Short notes Please refer chapters at sl. no. 1, 1 b, c, d, e, 2 b, 3 B, 4 b, d, e., 5, 6 a, 7 e, f, g., 8, 9. A. b, c, 9. B. Compare and contrast type from <ul style="list-style-type: none"> - Physostigmine and Neostigmine - Atropine and Scopolamine - Procaine and Cocaine - Heparin and Dicoumoral - Iron Dextran and Iron Sorbitol Citric Acid complex - Digoxin and Digitoxin - Furosemide and Spiranolactone / Triamterene 	Short essay type Short notes 06 x 5 = 30 marks Compare and contrast 02 x 5 = 10 marks	40
To classify the drug and write its mechanism of action or adverse effect or clinical use or specific antidote indicated in its poisoning, if any.	Short Answer type 05x 02 = 10 marks	10
	TOTAL	70

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks

D. Practicals : 90 Marks

1. Spotters 10 nos.x1 = 10 marks
2. Prescriptions 2 nos. (10+10 marks) = 20 marks
(one medical plus one dental prescription)
3. Preparations 2 nos.x 30 marks = 60 marks
(one medical plus one dental preparation)

TEXT BOOKS RECOMMENDED :

Name of the Book & Title	Author	Edn	Year. of Publ.	Publ.'s Name Place of Publ.	Price
R.S.Satoskar and S.D.Bhandarkar	Pharma cology & Pharmaco therapeutics	21st	2009	Bombay Popular Prakashan	Rs. 605/-
Tripathi K.D.	Essentials of Medical Pharmacology	6th	2008	New Delhi Jaypee Brothers Medical Publishers	Rs. 795/-
Tripathi K.D.	Essentials of Medical Pharmacology	1st	2006do.....	Rs. 395/-
P N Bennett M J Brown	Clinical Pharmacology	9th	2003	New York Churchill Livingston	\$ 11.00
Kartzung Betram G.	Basic and clinical Pharmacology	11th	2007	USA Lange Medical Books	Rs. 3024/-
H L Sharma K K Sharma D K Gupta	Text book of Dental Pharmacology	1st	2008	Hyderabad, New Delhi Paras Medical Publishers	Rs. 695/-
Padmaja Udaykumar	Medical Pharmacology	3rd	--	Publishers & Distributors Pvt Ltd.,	

II - BDS

GENERAL PATHOLOGY

Theory : 55 Hours

	Hours
1. Introduction to pathology as scientific study of disease, evolution of modern pathology, subdivisions in pathology, techniques used in the study of pathology and terms used in pathology	02
2. Disturbances of metabolism of cells-Intra cellular accumulations (Degenerations) Fatty change, accumulation of lipids, proteins and glycogen. cellular swelling, hydropic change, Hyaline change and mucoid degeneration. Disorders of pigmentation and pathologic calcification.	03
3. Cell injury- Causes Types, mechanism, intracellular changes, morphology with examples, Cell death. Necrosis - definitions, types of necrosis with examples and cellular changes (morphology), mechanism. Apoptosis - definition, examples, morphology Gangrene- definition, types with examples, differences between dry and wet gangrene, stressing mainly on cancrum oris.	05
4. Amyloidosis - definition, pathogenesis and emphasis on localised amyloidosis, special stains for amyloidosis.	02
5. Inflammation and Repair-Acute and chronic inflammation. Chemical mediators of acute inflammation, Outcome of acute inflammation. Granulomatous inflammation - definition of granuloma, Types of granuloma, with examples. Patterns and systemic effects of inflammation.	05
6. Healing of a wound in general with special emphasis on healing of a fracture. Factors affecting wound healing.	03
7. Immunity and hypersensitivity, definition, types mechanisms of immunology tissue injury with examples. Brief Introduction to Auto-Immune diseases.	06

8. Infection and infestation - Bacterial- like pyogenic infections, typhoid fever, viral like AIDS, Hepatotropic viruses. Tuberculosis, Leprosy&syphilis, Actinomycosis. Viral- Hiv, Hepatotropic Viruses, Htlv. Fungal- Candidiasis, Mucormycosis.	08
9. Circulatory disturbances - Hyperaemia, congestion, Haemorrhage shock, oedema, thrombosis, embolism and infarction.	08
10. Disturbances of Nutrition; Starvation, Obesity, Malnutrition, Pathogenesis of Deficiency Diseases with Special Reference to Disorders of Vitamins & Minerals	05
11. Diabetes mellitus types, Aetio Pathogenesis, morphological changes in different organs, complications and lab investigations.	02
12. Brief Introduction to Growth and Differentiation. Adaptive Disorders of Growth-Arophy, Hypertrophy Hyperplasia, Metaplasia. Types and Pathologic Changes Of Dysplasia And Premalignant Lesions.	03
13. Neoplasia : Introduction, Definition, Classification, Characteristics of Benign and Malignant Tumours. Routes of Spread of Malignant Tumours, Aetiology, Epidemiology and Pathogenesis of Neoplasia, Oncogenes, Clinical Aspects & Laboratory Diagnosis of Cancer.	08
14. Common Diseases of Bone - Osteomyelitis, Tumours and Tumours Like Lesions of Bone.	04
15. Introduction to Diseases of Oral Cavity & Salivary Glands-inflammatory Conditions, Infections, Premalignant Conditions and Squamous Cell Carcinoma of Oral Cavity Sialadenitis, Pleomorphic Adenoma and Warthin's Tumour. (exclude Diseases of Teeth, Periodontal Diseases and Odontogenic Tumours)	04
Haematology and Clinical Pathology	
1. Introduction to Haematology-brief Introduction to Haemopoiesis, Bone Marrow Aspiration & Biopsy.	02
2. Diseases of RBCS-Anaemias -classification, Iron Deficiency Anemia, Vit.b12 Or Folic Acid Deficiency Anaemia and Haemolytic Anaemias and Their Lab Investigations. Polycythaemia	07

3. Diseases of WBCS- Pathologic Variations in white cell counts and Leukemoid Reactions.	02
4. Neoplastic Proliferation of Leucocytes - Leukaemias - Acute & Chronic Leukaemias with Brief Introduction to Lymphomas.	05
5. Haemorrhagic Disorders with their Lab Investigations.	02

PRACTICALS AND LECTURE DEMONSTRATIONS : 50 hours

Lecture Demonstrations -----10 Hours

1. Anti Coagulants, Blood Indices
2. Pcv And Erythrocyte Sedimentation Rate
3. Instruments & Their Uses :
 - A. Neubauer's Counting Chamber.
 - B. Haemoglobinometer
 - C. W.b.c.pipette
 - D. Wintrobe Tube
 - E. Urinometer.
4. Cytologic Techniques - Fnac And Buccal Smear
5. Study Of Anaemias - Microcytic, Macrocytic And Dimorphic Blood Picture.
6. Study Of Acute Leukemias- Any One Type
7. Study Of Chronic Leukemias-any One Type.

Histopathology Slides And Specimens -----20 Hours

1. Acute Appendicitis
2. Granulation Tissue.
3. Actinomycosis
4. Tubercular Lymphadenitis
5. Fatty Liver.
6. Chronic Venous Congestion (cvc) Liver / Spleen / Lung.
7. Squamous Papilloma / Transitional Cell Papilloma
8. Pleomorphic Adenoma
9. Capillary And Cavernous Haemangioma
11. Fibroma,
12. Lipoma
13. Osteoma, Chondroma
14. Squamous Cell Carcinoma
15. Basal Cell Carcinoma
16. Adenocarcinoma,
17. Malignant Melanoma.
18. Osteosarcoma
19. Osteoclastoma.

Specimens

- 1. Acute Appendicitis.
- 2. Tuberculosis Lymph Node /any Other Organ
- 3. Fatty Liver.
- 4. Infarction Spleen.
- 5. Chronic Venous Congestion (c.v.c.) Liv
- 6. Lipoma /any Other Benign Tumours
- 7. Carcinoma-breast /any Other Malignant Tumour
- 7. Adenocarcinoma
- 8. Osteosarcoma
- 9. Osteoclastoma.
- 10. Gangrene.

Practicals That Must Be Done By Students : 20 Hours

- Determination Of Haemoglobin Percentage
- Blood Grouping.
- Total Leukocyte Count
- Bleeding Time, Clotting Time
- Peripheral Blood Smear - Staining & Study
- Differential Leukocyte Count.
- Urine Examination - For Sugar, Ketone Bodies, Protein, Blood, Bile Pigments And Bile Salts - Any One Standard Test.

Scheme of Examination
To Conduct General Pathology and Microbiology Exams on Separate Days.

A. Theory : 45 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
General Pathology Inflammation, Healing and Repair, Tuberculosis, Leprosy, Thrombosis, Diabetes Mellitus, Neoplasia. Anaemias Due to Nutritional Deficiency, Amyloidosis, Cell Injury and Cell Death	Long Essays 1 x 10 marks	10
General Pathology Haematology Clinical Pathology Intracellular Accumulations, Necrosis, Gangrene, Apoptosis, Amyloidosis, Pathologic Calcification, Hypersensitivity Reactions, Infections, Shock, Oedema, Infarction, Congestion, Hypertension, Diabetes Mellitus,	Short Essays 3 x 5 marks	15

Contents	Type of Questions and Marks	Marks
Premalignant Conditions, Neoplasia, Osteomyelitis, Anaemias, Neoplastic Proliferation of Wbcs - Leukaemias and Lymphomas, Haemorrhagic Disorders, Erythrocyte Sedimentation Rate (Esr).		
2 From Haematology 1 From Clinical Pathology 2 From General Pathology	Short Answers 5 x 2 marks	10
	Total	35

B. Viva Voce : 10 Marks

C. Internal Assessment - Theory : 05 Marks, Practical : 05 Marks

D. Practicals : 55 Marks

1. Spotters : 1.5 Marks for each Spotter

Instruments	-	2
Haematology slide	-	1
Specimens	-	2
Histopathology slides	-	5
		<u>15 Marks</u>

2. To examine given sample of urine for abnormal constituents - 15 Marks
3. To do differential count on the given peripheral blood smear - 15 Marks
4. To estimate haemoglobin percentage in the given sample of blood
or
To determine blood groups (abo and rh) in the given sample of blood - 10 marks

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Robbin's pathologic basis of disease	Cotran & Kumar, Robins	7th	2003	Prism & Saunders Bangalore	
De.Gruchy Clinical Haematology in Medical Practice	Frank Firskin Colin Chesterman David Penington Bryan Rush	5th	2003	Oxford University Press New Delhi	
Pathology for dental students	Harsh Mohan	recent	2003	--	
Medical Laboratory Technology (Methods and Interpretation)	Dr. Ramnik Sood	5th	1994	Jaypee Brothers New Delhi	Rs. 250/-

Reference Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Clinical Diagnosis and Management by Laboratory Methods	Todd, Sanford, John Bernard Davidson	20th	2001	Veerendar Kumar Arya for AITBS with Saunders New Delhi	Rs.1250/-
Haematology an illustrated colour text	Martin R. Howard Peter J Hamilton	1st	1997	Churchill Livingstone USA	£ 4.95
General Pathology Vol. I & II	Y.M. Bhende & S.G. Deodhare	5th edn. Under print		Popular Prakashan Bombay	
Colour Atlas of Histopathology	R. C. Curran	4th (Revised)	2000	Harvey Miller Oxford university press	Rs. 1250/-

II - BDS

MICROBIOLOGY

Theory: 63 Hrs.

		Teaching Hours
	GENERAL BACTERIOLOGY	
1.	Introduction, History and classification.	02
2.	Morphology, Physiology of Bacterial cell.	02
3.	Bacterial Genetics	02
4.	Infection	02
	IMMUNOLOGY	
1.	Immunity	02
2.	Antigen	01
3.	Antibodies	01
4.	Structures and functions of Immune system	01
5.	Immune response	01
6.	Antigen and antibody reactions & compliment	04
7.	Hypersensitivity	02
8.	Auto immunity	01
9.	Immunology of transplantation	01
	SYSTEMATIC BACTERIOLOGY	
1.	Staphylococci	01
2.	Streptococci (Dental Caries)	02
3.	Pneumococci	01
4.	Meningococci & Gonococci	01
5.	Coryne bacterium diphtheriae	02
6.	Bacillus	01
7.	Clostridia	02
8.	Non sporing Anaerobes	02
9.	Mycobacteria	03
10.	Spirochaetes (Treponema, Leptospira and Borrelia)	03
11.	Normal Bacterial flora of the oral cavity	01
	VIROLOGY	
1.	General properties of viruses	03
2.	Herpes viruses	02
3.	Measles and Mumps	01

4.	Rabies virus.	01
5.	Hepatitis viruses	02
6.	Human Immuno deficiency Virus (HIV)	01
7.	Adeno oncogenic viruses.	02
	PARASITOLOGY	
1.	Introduction to parasitic diseases	01
2.	Entamoeba histolytica, E. Gingivalis Malaria, Leishmania	03
	MYCOLOGY	
1.	Candidiasis (in detail)	02
2.	Rhinosporidiosis	02
	APPLIED MICROBIOLOGY	
1.	Immunisation schedule, Collection of materials, Experimental animals & hospital infections - In Brief	02

MUST KNOW - MANDATORY TO KNOW

I GENERAL BACTERIOLOGY

1. Morphology - Structure, appendages, demonstration.
2. Physiology - Nutritional requirement, growth curve.
3. Bacterial genetics - Mechanism of genetic transfer, drug resistance.
4. Infection- definition, bacterial factors, Host factors, types of infection, carrier, septicaemia, bacteraemia, pyemia, toxemia, epidemic, endemic, pandemic, nosocomial infection.

II. IMMUNOLOGY

1. Immunity - Definition, classification, factors, mechanisms examples
2. Antigens - definition, types and properties.
3. Antibodies - structure, functions of diff. types of Immuno globulins.
4. Immune system - structure, function of T cells, B cells, differences.
5. Immune response - factors responsible for immune variations, adjuvants, mechanism.
6. Antigen - Antibody reactions - definition, mechanism, examples, clinical applications of AG-AB reactions like agglutination, precipitation, Complement Fixation Test (CFT), Neutralisation, Fluorescent Immune test, Opsonisation, ELISA test etc.
7. Hypersensitivity - definition, classification, mechanisms.
8. Autoimmunity - Theories, definition, classification, mechanisms.

III. SYSTEMATIC BACTERIOLOGY

1. Staphylococci - Classification, morphology, pathogenesis, pathogenecity tests, lesions, lab diagnosis and treatment.
2. Streptococci - Classification, morphology, cultural characters, Pathogenesis, lab diagnosis, sequelae, Dental plaque, Dental caries & its diagnosis.
3. Pneumococci - Morphology, cultural characters, diff. between pneumococci and streptococci, pathogenecity and lab diagnosis.
4. Meningococci - Causes of bacterial meningitis, Morphology, lab diagnosis of bacterial meningitis including meningococcal meningitis.

5. *Corynebacterium* - diphtheriae - Morphology, cultural characters toxigenicity, its occurrence, spread, lab diagnosis, prophylaxis.
6. *Bacillus* species - Morphology, lesions and lab diagnosis.
7. Clostridia - Classification, pathogenesis, lab diagnosis of gas gangrene tetanus, prophylaxis and clinical features.
8. Nansporing anaerobes - Classification, pathogenesis, lesions, Lab diagnosis in respect to dental infections.
9. Mycobacteria - *Mycobacterium leprae*, *Mycobacterium tuberculosis*, Atypical mycobacteria, Morphology, classification, cultural characters, pathogenesis, lab diagnosis, susceptibility test and prophylaxis.
10. Actinomycosis - Morphology, lesions in respect to orofacial lesions, lab diagnosis
11. Spirochaets - classification, morphology, pathogenesis & lab diagnosis of *Treponema*, *Borrelia*, *Leptospira*.
12. Normal Bacterial flora of the oral cavity - Enumerating the organisms opportunistic importance in dental practice.

IV. VIROLOGY

1. General virology - general properties, definition, classification, structure, pathogenesis, cultivation, lab diagnosis, antiviral agents immunology.
2. Herpes viruses - structure, classifications, lesions and lab diagnosis HSV 1, 2, EBV CMV, Virus Zoster (VZ) virus
3. Measles & Mumps viruses - structure, lesions, prophylaxis and lab diagnosis.
4. Hepatitis viruses - ABCDE; structure, route of entry, lesions, lab diagnosis and prophylaxis.
5. HIV - classification, structure, pathogenesis, route of entry opportunistic infection in AIDS, lab diagnosis - prophylaxis

V. MYCOLOGY

1. *Candida* - Morphology, lesions, lab diagnosis, diff. Species in relation to oral candidiasis
2. Rhinosporidiosis

VI. PARASITOLOGY

Introduction to parasitology - classification, general diseases caused by them.

Entamoeba, Malaria, *Leishmania* - Morphology, Clinical features, pathogenesis and lab diagnosis.

DESIRABLE TO KNOW (Theory questions need not be asked from this list)

I. GENERAL BACTERIOLOGY :

1. Introduction
2. Historical aspects

II. IMMUNOLOGY :

1. Complement - properties and functions.
2. Immuno deficiency diseases, enumerating the diseases
3. Immunology of transplantation, classification and brief description of transplantation.

III. BACTERIOLOGY :

- 1. Gonococci - Morphology, lesions, lab diagnosis.
- 2. Coliforms - Classification, pathogenesis, infections caused by them and lab diagnosis.
- 3. Proteus - Classification, pathogenesis, infections caused by them and lab diagnosis.
- 4. Salmonella - pathogenesis, lab diagnosis, prophylaxis.
- 5. Shigella - classification, pathogenesis, lab diagnosis
- 6. Vibrio - pathogenesis & lab diagnosis
- 7. Pseudomonas - Importance in hospital infection and drug resistance.

IV. VIROLOGY :

- 1. Adeno & oncogenic viruses.
- 2. Rabies viruses- structure, pathogenesis, clinical feature, lab diagnosis, prophylaxis.
- 3. Poliomyelitis - Pathogenesis, clinical feature, lab diagnosis, prophylaxis.

V. PARASITOLOGY:

- 1. Important Helminthic parasites.

VI. APPLIED MICROBIOLOGY :

- 1. Immunisation schedule - prophylaxis
- 2. Collection of materials - for lab diagnosis
- 3. Experimental animals - Uses of animals in dentistry

**PRACTICALS & PRACTICAL DEMONSTRATIONS : 50 Hours
MUST KNOW :**

PRACTICAL DEMONSTRATIONS

1. Sterilisation and disinfection in detail	06x02 = 12
2. Culture media	03x02 = 06
3. Cultural methods & Anaerobic methods	02x02 = 04
4. Identification of bacteria & demonstration	02x02 = 04
5. Microscopy	02x02 = 04

PRACTICALS

6. Simple stain and hanging drop (Not for exams)	01x02 = 02
7. Grams stain	03x02 = 06
8. Alberts stain	03x02 = 06
9. Ziehl Neilsen's stain	03x02 = 06

Total Hrs. 50

Sterilization - definition, classification, methods, physical, filtration, radiation, chemicals - used in dental practice, hospital practice.

Culture media - Classification, uses.

Culture methods - Inoculation methods, antibiotic sensitivity, Anaerobic culture techniques.

Microscopy - maintenance, uses, different parts, different types.

LIST OF PRACTICAL MATERIALS

SLIDES FOR DEMONSTRATION :

1. Staphylococcus
2. Streptococcus
3. Gonococcus
4. Pneumococcus
5. M Tuberculosis
6. M Leprae
7. Anthrax
8. Cl. Tetani
9. Spirochaetes
10. Gram Negative Bacilli
11. Candida
12. (Actinomyces)

SLIDES FOR PRACTICAL EXERCISES :

Grams stain - Staphylococci
- Gram negative bacilli
- Mixture of any two organisms
- Gram stain of the oral cavity.

Alberts stain - Kleb's Löffler's Bacilli (KLB) culture slide

Ziehl-Neelson's stain - Sputum positive for AFB

MEDIA FOR DEMONSTRATION :

UNINOCULATED MEDIA :

1. Nutrient agar plate
2. Blood agar plate
3. Chocolate agar plate
4. Macconkey agar plate
5. Glucose citrate broth (Blood culture bottle)
6. Lowenstein Johnson's Media slope
7. Loefflers serum slope
8. Sabourauds slope
9. Robert Cooked Meat broth

INOCULATED MEDIA :

- 1. Nutrient agar with staphylococci
- 2. Blood Agar with Alpha Haemolytic Streptococci.
- 3. Blood Agar with Beta Haemolytic Streptococci.
- 4. Potassium Tellurite with growth of C.diphtheriae
- 5. Milk agar with staphylococci
- 6. Antibiotics sensitivity plate

INSTRUMENTS :

- 1. VDRL slide
- 2. Tuberculin syringe
- 3. Sterile swab
- 4. Seitz filter
- 5. Macintosh filds jar
- 6. Widal rack with tubes
- 7. Microtitre plate
- 8. Disposable syringe
- 9. Surgical gloves

Scheme of Examination

A. Theory : 35 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
One Long Essay question from Systematic Bacteriology	Long Essays 1 x 10 marks	10
One question from General bacteriology One question from Immunology One question from Mycology One question from Parasitology / Oral Microbiology One question from Systematic Bacteriology	Short Essays 3 x 5 marks	15
One question from General bacteriology One question from Immunology One question from Systematic Bacteriology Two questions from Virology	Short Answers 5 x 2 marks	10
	Total	35

- B. Viva Voce : 10 Marks
 C. Internal Assessment - Theory : 05 marks, Practicals : 05 marks
 D. Practicals : 45 Marks

Spotters : 10 Slides	-	05	
Media	-	03	
Instruments	-	02	15 Marks
Gram's Stain			10 Marks
Ziehl - Neelsen's Stain			10 Marks

Text Books Recommended :

Name of the Book & Title	Author	Edn. and Yr. of Publication	Publisher's Name and Place of Publication	Price
Text Book of Microbiology	R. Anantha Narayan and C. K. Jayaram Paniker	7th 2005	Orient Longman Private Ltd. Chennai	Rs. 310/-
Medical Microbiology Volume I	Cruickshank	13th 1989	Medical Division Orient Longman group Edinburg	£ 10.50
Text Book of Bacteriology	Fair Brothers	--	--	--

Reference Books

Name of the Book & Title	Author	Edn. and Yr. of Publication	Publisher's Name and Place of Publication	Price
Bacteriology for Dental Students	T.H. Merville and G.L. Slack	--	Medical Book Ltd. London	--
Bacteriology for students of Dental Surgery	R.B. Lucas and Ivor R.H.Kramer	--	Calcutta	--
Oral Microbiology and Infectious Diseases	Burnett and Scherp	--	Oxford Book Company Calcutta	--
Immunology	Donald M Weir	7th 1993	Longman Singapore Pub. Lt. Singapore	£ 2.50
Medical Parasitology	N. C. Dey and T.K.Dey	10th 1997	New Central Book Agency Pvt.Ltd. Calcutta	Rs. 150/-
Notes on Medical Virology	Morag C. Timbury	--	--	£ 5.00
Manual of Clinical Mycology	Conant and Smith	--	--	--

II BDS

ORAL PATHOLOGY AND MICROBIOLOGY

Theory : 25 Hours

Practical : 50 Hours

MUST KNOW

1. Developmental Disturbances of oral and para oral structures :(15 hrs)
 - a. Developmental disturbances of Jaws
 - Agnathia, Micrognathia, Macrognathia, Facial Hemihypertrophy, Facial Hemiatrophy
 - b. Developmental Disturbances of lips and palate
 - Congenital Lip pits and Commissural pits and fistulas
 - Double lip, Cleft lip, cleft Palate, Chelitis Glandularis, Chelitis Granulomatosa, Hereditary Intestinal Polyposis, Hereditary Melanotic Macule
 - c. Developmental disturbances of Oral Mucosa
 - Fordyce's Granules
 - Focal epithelial Hyperplasia
 - d. Developmental disturbances of gingiva
 - Fibromatosis Gingiva, Retrocuspid Papilla
 - e. Developmental Disturbances of Tongue
 - Macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue.
 - Aglossia, macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue, lingual Varices, lingual Thyroid Nodule
 - f. Development disturbances of oral lymphoid tissue:
 - Reactive lymphoid aggregates
 - Lymphoid hamartoma
 - Lympho-epithelial cyst
 - g. Developmental disturbances of salivary glands:
 - Aplasia, Xerostomia, Hyperplasia of the palatal glands, Atresia, Aberrancy, Stafine's cyst Anterior Lingual Depression
 - h. Developmental disturbances in size of teeth:
 - Microdontia, Macrodontia
 - i. Developmental disturbances in the shape of the teeth:
 - Fusion, Germination, Concrescence, Dilacerations, Talon's Cusp, Dens in Dente, Dens Evaginatus, Taurodontism, Supernumerary Roots, Enamel Pearl
 - j. Developmental Disturbances in number of teeth
 - Anodontia, Supernumerary teeth, Predeciduous and Post Permanent dentition
 - k. Developmental Disturbances in Structure of Teeth:
 - Amelogenesis Imperfecta, Enamel Hypoplasia, Dentinogenesis Imperfecta, Dentinal dysplasia, Regional Odontodysplasia, Shell Teeth.
 - l. Developmental Disturbances in eruption of teeth:
 - Premature Eruptions, Eruption Sequestrum, Delayed Eruption, Multiple Unerupted teeth, Submerged Teeth. Embedded and Impacted Teeth

m. Developmental / Fissural cysts of the Oral cavity

- Median palatal cyst, Globulomaxillary cyst, Median Mandibular cyst, Naso-alveolar cyst, Palatal cyst of neonates, Thyroglossal duct cyst, Epidermoid, and Dermoid cyst, Nasopalatine duct cyst.

2. Dental Caries

(5 hrs)

- Theories and Etiology
- Clinical features
- Classification
- Histopathology
- Immunology
- Caries activity Tests
- Factors Influencing Caries

3. Diseases of the pulp and Periapical tissues

(5 hrs)

- Diseases of the Dental Pulp
 - Focal Reversible Pulpitis, Acute Pulpitis, Chronic Pulpitis, Chronic Hyperplastic Pulpitis.
- Diseases of the Periapical Tissues
 - Acute Apical Periodontitis, Periapical Granuloma, Periapical Abscess, Periapical Cyst
- Osteomyelitis
 - Acute Suppurative Osteomyelitis, Chronic Suppurative Osteomyelitis, chronic Focal And Diffuse Sclerosing Osteomyelitis, Chronic Osteomyelitis With Proliferative Periostitis

Practicals : 50 hours

Identification of Hard and Soft Tissue Specimens

Text Books Recommended :

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Shafer's Text Book of Oral Pathology	R. Rajendran & B Shivapathasundaram	6th	2009	Elsevier	Rs. 876/-
Oral Pathology Clinical Pathologic Correlation	Regezi & Scuiba	5th	2007	W. B. Saunders Company USA	\$ 25
Textbook of Oral and Maxillofacial Pathology	Neville, Damm. Allen, Bouquot	3rd	2009	Elsevier	-
Oral Diseases in The Tropics	Prabu, Wilson, Duftry, Johnson	1st	1992	Oxford University Press	Rs. 400/-

Other suggested reading

1. Pathology of Tumors-Lucas
2. Oral Immunology - Lehner
3. Oral Pathology - Soames and Southam
4. Contemporary Oral and Maxillofacial Pathology - SAPP, Eversole, Wysocki
5. Colour Atlas of Oral Pathology - John Everson And Crispian Scully

III BDS

GENERAL MEDICINE

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry e.g.: indications and contraindications for anesthesia in oral and dental procedures in different diseases. A dental student should be taught in such a manner that he is able to record the pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body, diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice. Too much details and treatment aspect (therapeutics) should be avoided.

Theory: 60 Hours (Medicine - 52 Hours, Psychology - 8 hours)

Must know	Desirable to know	Hours
1. Aims of Medicine, definition of diagnosis, treatment & prognosis. History taking, physical examination of the patient, diagnosis and management of disease.	Genetics and disease Medical Ethics	2 Hours
2. Infections: Enteric fever, HIV, Herpes simplex, Herpes zoster, Syphilis, Diphtheria, Malaria, Actinomycosis, Viral hepatitis, Tuberculosis.	Infectious mononucleosis, Mumps, Measles, Rubella, Leprosy, Organisation and functions of the immune systems.	5 Hours
3. GIT: Stomatitis, Gingival hyperplasia, Dysphagia, Acid peptic disease, Jaundice, Acute and chronic hepatitis, Cirrhosis of liver, Ascitis, Amoebiasis, Tender hepatomegaly, Hepatotoxic drugs, Portal hypertension.	Diarrhoea and dysentery including Malabsorption syndromes, Helicobacter pylori	5 Hours
4. C.V.S: Acute rheumatic fever, Valvular heart disease, Hypertension, Ischemic heart disease (myocardial infarction), Infective Endocarditis, Common arrhythmias, Classification of congenital heart disease	Heart failure, Fallot's tetralogy, ASD, VSD.	7 Hours
5. Respiratory system: Applied anatomy and physiology of RS, Pneumonia, COPD, Pulmonary Tuberculosis, Bronchial asthma, Pleural effusion, Acute respiratory tract infections, Pulmonary embolism, Suppurative lung diseases, Lung abscess,	Bronchiectasis, Lung cancer. Empyema, Sleep apnea, ARDS, Respiratory failure	5 Hours
6. Hematology: Hematopoiesis, Anaemias, Clotting and Bleeding disorders, Acute and chronic myeloid leukemias, Agranulocytosis &	Principles of blood and blood products transfusion, Thromboembolic disease,	7 Hours

Neutropenia, Thrombocytopenia, Splenomegaly Lymphomas, oral manifestations of haematological disorders.	Oncogenesis, Hemolytic anemia, DIC, (disseminated intravascular coagulation)	
7. Renal System: Acute Nephritis & Nephrotic syndrome, U.T.I	Renal function tests, CRF	4 Hours
8. Nutrition: Balanced diet, PEM, Vitamin deficiency disease, Calcium and phosphate metabolism. Flurosis	Osteomalacia, Osteoporosis	4 Hours
9. C N S: Facial Palsy, Facial pain, Trigeminal neuralgia, Epilepsy, Headache including migraine	Meningitis (acute and chronic), Anticonvulsants	5 Hours
10. Endocrine: Diabetes Mellitus, Acromegaly, Hypothyroidism,	Addison's disease, Cushing's syndrome, Parathyroid disease and calcium metabolism Preoperative assessment of diabetic patients, Acute adrenal deficiency	5 Hours
11. Critical care medicine: Syncope, Cardiac Pulmonary Resuscitation (CPR), Anaphylaxis, Allergy, Angio-neurotic edema.	Acute LVF, ARDS, Cardiogenic Shock, Coma	3 Hours
Miscellaneous: Adverse drug reactions, Drug interactions	Rheumatoid disease, Osteoarthritis Scleroderma	

Psychology / Psychiatry

Must know	Desirable to know	Hours
1. Introduction to behavioural sciences: Definition Over lapping of social, behavioural and biological sciences	Holistic approach to medical care	2 Hours
2. Pain: Behavioural, emotional, autonomic, conscious and unconscious, components of pain Role of anxiety in worsening pain (vicious circle)		5 Hours
3. Interview technique: Doctor-patient relation, listening and questioning. Pre and post treatment counselling, probing of the fears, anxiety and anger, guilt in cases of extraction, surgery, HIV, cancer etc.		5 Hours
4. Psychiatric disorders: Classification of mental illnesses. Aetiology - Biopsychological aspects.	Psychosis psychosomatic illnesses, alcoholism and drug dependence, dementia, illness behaviour, socio-cultural aspects stressing on personalities (anxiusus, obsessive)	7 Hours
5. Neurotic disorders and psychosomatic: Definition, classification, aetiology, clinical manifestations (anxiety, depression, phobia, somatoform disorders, conversion reaction, adjustment reaction), stress, coping, alexithymia.	Management - Stress	5 Hours
6. Liaison psychiatry: Dental care in mental retardation, dementia, Schizophrenia Eating disorders - deficiencies. Psychotropic drugs- side effects and drug interactions.		7 Hours

Clinical : 90 Hours (posting in a general hospital)

1. Five complete cases must be written in a record book before the student takes the final examination.
2. The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP, temperature, edema, cyanosis, clubbing, jaundice, lymphadenopathy, oral cavity) and be able to examine cardiovascular and respiratory systems, abdomen and the facial nerve and signs of meningeal irritation.

Scheme of Examination

A. Theory : 100 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
From Must Know topics only (sl. no. 1 to 11 under Theory)	Long Essays 2 x 10 marks	20
From Must Know topics only (sl. no. 1 to 11 under Theory) And Psychology/Psychiatry	Short Essays 10 x 5 marks	50
From Must Know topics only (sl. no. 1 to 11 under Theory)	Short Answers 10 x 3 marks	30
	Total	100

B. Viva Voce : 25 Marks

C. Internal Assessment - Theory : 25 marks, Practicals : 25 marks

D. Clinicals : 75 Marks

- i. Case History : 10 marks
- ii. Clinical Examination : 30 marks
- iii. Investigation : 10 marks
- iv. Diagnosis & D. D. : 10 marks
- v. Management : 05 marks

Textbooks recommended:

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Davidson's Principles of Practice of Medicine	Edward Christopher	18th	1991	Churchill Livingstone UK	Rs. 1168/-
Hutchison's Clinical Practice	Swash Michael	21st	2001	Churchill Livingstone UK	Rs. 595/-
Principles of Internal Medicine (for further reading)	Harrison	15th	2001	Mc. Graw Hill US	Rs. 1895/-
API Textbook of Medicine	Association of Physicians of India		1999	India	Rs. 900/-

GENERAL SURGERY

Theory: 60 Hours

1. Introduction - History of Surgery	1 hour
2. Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser.	2 hour
3. Classification of Diseases, General Scheme of Studying a disease - Etiopathology, Clinical features, Investigations, Diagnosis, Management, Complications, Prognosis	2 hour
4. Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing.	1 hour
5. Skin Grafting	1 hour
6. Inflammation and Infection - Definition, Etiology, Pathology, Classification	1 hour
7. Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina.	2 hour
8. Chronic Infections - Nonspecific, and Specific - Tuberculosis, Syphilis, Actinomycosis, Leprosy.	2 hour
9. AIDS	2 hour
10. Bacteraemia, Septicemia, Pyaemia, Toxaemia	1 hour
11. Hemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss.	1 hour
12. Bleeding Disorders - Coagulation Mechanism.	1 hour
13. Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis.	1 hour
14. Blood Groups - Blood Transfusion - Complications of Transfusion and Management, Massive Transfusion.	1 hour
15. Blood Fractions and their uses.	1 hour
16. Ulcers - Definition, classification, etiology, Nonspecific Ulcers, Specific Ulcers - Tuberculous Ulcers, Syphilitic Ulcer, Malignant Ulcers - Squamous	2 hour

cell Carcinoma, Basal Cell Carcinoma, Malignant Melanoma, Marjolin's Ulcer, Diabetic Ulcer.	
17. Sinus and Fistula	1 hour
18. Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.	1 hour
19. Cysts - Definition, Classification, Clinical Features, Complications, Management.	1 hour
20. Common Cysts - Mucous Cyst, Sebaceous Cyst, Dermoid Cyst, Ranula, Cystic Hygroma, Branchial Cyst, Thyroglossal cyst, Ganglion.	1 hour
21. Tumours - Definition, Classification, Etiology of Cancer, Spread of Cancer, Early Diagnosis, Investigations, Modalities of Treatment and Prognosis, Recent Advances	2 hour
22. Common Benign and Malignant Tumours of Head and Neck Region - Lipoma, Fibroma, Neurofibroma, Haemangioma, Lymphangioma, Osteoma, Carcinoma, Sarcoma	1 hour
23. Biopsy - Indications and Methods	1 hour
24. Diseases of Lymphatic and Lymph nodes - a. Lymphangitis - Acute and Chronic, chronic Lymphoedema b. Lymphadenopathy - Classification i. Inflammatory - Acute and Chronic, Non-specific and Specific - Tubercular Lymphadenitis, Cold abscess - Collar Stud Abscess. ii. Malignant Tumours - - Primary : Hodgkin's Disease, Non Hodgkin's Lymphoma - Secondary carcinoma	1 hour
25. Diseases of Mouth, Lip, Tongue, Palate & Tonsils - - Ulcers, Stomatitis, Leukoplakia, Carcinoma of Lip, Cheek, Tongue - Ranula - Sublingual Dermoid - Tonsillitis, Quinsy	1 hour
26. Salivary Glands - - Acute and Chronic Infections - Parotid Abscess, Salivary Calculus - Salivary Tumours - Classification, Mixed Parotid Tumours - Carcinoma, Adenolymphoma, Sjogren's Disease.	1 hour
27. Neck Swellings - Midline and Lateral Swellings, Cystic and Solid Swellings. - Classification, Differential diagnosis, Treatment.	1 hour
28. Head Injury Management	1 hour

29. Facio-Maxillary Injuries	1 hour
30. Management of Severely Injured Patient - Resuscitation	1 hour
31. Fractures and Dislocations - Causes, General Principles of Management, Healing of Fractures and Complications	1 hour
32. Fractures of Mandible	1 hour
33. Jaw Swellings - Epulis, Odontomes, Bone Cysts and Tumours, Burkitt's Lymphoma	1 hour
34. Osteomyelitis of Mandible	1 hour
35. Thyroid Gland - Development, Congenital anomalies, Classification of goitres, Acute and Chronic Thyroiditis, Hashimoto's Disease, Reidel's Thyroiditis, Hyperthyroidism, Hypothyroidism, Adenoma, Carcinoma.	1 hour
36. Parathyroid - Hyperparathyroidism, Tetany, Calcium Metabolism.	1 hour
37. Pituitary Gland	1 hour
38. Tracheostomy - Indications, Steps of Operation, Post Operative Care	1 hour
39. Diseases of Arteries and Veins in general - Varicose Veins, Atherosclerosis, Aneurysm, Carotid Body Tumours	1 hour
40. Nervous System - Nerve Injury, Regeneration, Repair, Nerve Grafting. - Facial Nerve Palsy, Trigeminal Neuralgia	1 hour
41. Burns and Scalds	1 hour
42. Development of Face - Cleft Lip and Palate repair	1 hour
43. Principles of Anaesthesia	1 hour

Desirable to Know:

1. Brief Surgical Anatomy of Pharynx, Oesophagus, Paranasal Airsinuses. Diseases related to obstructive ones in pharynx and Oesophagus.
2. Introduction to - Oncology, Radiotherapy, Surgery and Genetic Engineering.
- 1 Hour

Ophthalmology

Curriculum for III B.D.S. students

Suggestions: 2 lectures-cum-demonstration (clinical \ visual)

5 Hours

I Lecture:- brief Outline of Surgical Anatomy of Eye and Orbit

- An outline of Ocular and Orbital Involvement in relation to Oral Diseases (Infections, Inflammations of the eye like Uveitis / Exophthalmitis / Optic Neuritis / Post-operative infections of the eye due to Dental sepsis / Invasion of tumours of Oral Cavity to the Orbit etc.) / Oral Surgery / Facial Injuries.

II Lecture:- Clinical Assessment of Ocular / Orbital Involvement.

- Recognition of common symptoms and signs of ocular and orbital involvement (Ecchymosis of lids, sub-conjunctival haematoma, Conjunctival Ecchymosis Chemosis, Proptosis: pupils: Diplopias: vision recording etc.)
- Management of superficial foreign bodies in the eye. (Prevention by protection/through eye wash with normal saline/removal of superficial conjunctival foreign bodies/for corneal or intraocular-foreign bodies to refer immediately)
- Timely referral to Ophthalmologist for any ocular/orbital problem.

E.N.T.

Ear : Middle Ear Infection

Nose : Para nasal sinuses Infection

Throat : Tonsillitis & Peritonsillar Abscess

5 hours

Clinicals : 90 Hours (posting in a general hospital)

Scheme of Examination

A. Theory : 100 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
<ul style="list-style-type: none">Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser.Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing.Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina.Bacteraemia, Septicemia, Pyaemia, ToxaemiaHemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss.Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis.Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.	Long Essays 2 x 10 marks	20
Questions may be asked from all the topics	Short Essays 6 x 5 marks + Short Answers 10 x 2 marks	30 20
	Total	70

- B. Viva Voce : 20 Marks
- C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks
- D. Clinicals : 90 Marks

Long Case : One which includes

Case History	10 Marks
Clinical Examination	30 Marks
Suggested investigations	10 Marks
Diagnosis, DD	20 Marks
Management	05 Marks

Books for Reading:

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
A Manual on Clinical Surgery	Somen Das	4th	1996	Dr.S.Das Calcutta	Rs. 430/-
Bailey & Love's Short Practice of Surgery	Charles. V. M. Ann	23rd	2000	Oxford University Press	\$ 29.00
Hamilton Baileys Demonstrations of Physical signs in Clinical Surgery	Hamilton Bailey	18th	1997	Butterworth Heinemann U.K.	\$ 67.50

Other Books for Reference:

1. Oxford Text Book of Surgery
2. Text Book of Surgery by Devita
3. Surgery by Sebastin
4. Surgery by somalal
5. Text Book of Surgery by Chatterjee
6. Surgical Anatomy by Heereggor
7. Diseases of Eye by Parson
8. Text Book of Ophthalmology by Vasudev Anand Rao
9. E.N.T. Diseases by Mohammed Muqbool
10. E.N.T. Diseases by N.C.Day
11. E.N.T. Diseases by K.K.Ramalingam

III BDS

ORAL PATHOLOGY AND MICROBIOLOGY

Theory: 120 Hours

ORAL PATHOLOGY

MUST KNOW

1. Benign and Malignant Tumours of the Oral Cavity

(30 hrs)

- a. Benign tumours of epithelial tissue origin
 - Papilloma, Keratoacanthoma, Nevus
- b. Premalignant lesions and conditions:
 - Definition, classification
 - Epithelial dysplasia
 - Leukoplakia, Carcinoma in-situ, Erythroplakia, Palatal changes associated with reverse smoking, Oral submucous fibrosis
- c. Malignant tumours of epithelial tissue origin
 - Basal Cell Carcinoma, Epidermoid Carcinoma (Including TNM staging), Verrucous carcinoma, Malignant Melanoma.
- d. Benign tumours of connective tissue origin :
 - Fibroma, Giant cell Fibroma, Peripheral and Central Ossifying Fibroma, Lipoma, Haemangioma (different types). Lymphangioma, Chondroma, Osteoma, Osteoid Osteoma, Benign Osteoblastoma, Tori and Multiple Exostoses.
- e. Tumour like lesions of connective tissue origin :
 - Peripheral & Central giant cell granuloma, Pyogenic granuloma, Peripheral ossifying fibroma
- f. Malignant Tumours of Connective tissue origin :
 - Fibrosarcoma, Chondrosarcoma, Kaposi's Sarcoma Ewing's sarcoma, Osteosarcoma Hodgkin's and Non Hodgkin's Lymphoma, Burkitt's Lymphoma, Multiple Myeloma, Solitary Plasma cell Myeloma.
- g. Benign Tumours of Muscle tissue origin :
 - Leiomyoma, Rhabdomyoma, Congenital Epulis of newborn, Granular Cell tumor.
- h. Benign and malignant tumours of Nerve Tissue Origin
 - Neurofibroma & Neurofibromatosis-1, Schwannoma, Traumatic Neuroma, Melanotic Neuroectodermal tumour of infancy, Malignant schwannoma.
- i. Metastatic Tumours of Jaws and Soft Tissues of Oral Cavity

(8 hrs)

2. Tumours of the salivary glands

Classification

- a. Benign tumours
 - Pleomorphic adenoma
 - Warthin's tumor
 - Basal cell adenoma
 - Canalicular adenoma
- b. Malignant tumors of the salivary glands
 - Malignant pleomorphic adenoma
 - Adenoid Cystic carcinoma
 - Acinic Cell carcinoma
 - Mucoepidermoid carcinoma
 - Central Mucoepidermoid carcinoma
 - Clear cell carcinoma
- c. Non Neoplastic enlargement of Salivary glands
 - Sjogrens syndrome
 - Mickulicz's disease
 - Necrotising Sialometaplasia

(8 hrs)

3. Cysts of Odontogenic Origin & Pseudocysts

- Introduction and Classification of Cysts of Oral Region
- Odontogenic Cysts
- Odontogenic Keratocyst, Dentigerous Cyst, Dental Lamina Cyst of newborn, Gingival Cyst of adults, Lateral Periodontal Cyst, Calcifying Odontogenic Cyst, Radicular Cyst.
- Pseudocysts
- Aneurysmal bone cyst, Traumatic bone cyst, Mucous extravasation phenomenon

(9 hrs)

4. Tumours of Odontogenic Origin

- Classification

BENIGN:

- a. Odontogenic epithelium without Odontogenic ectomesenchyme- Ameloblastoma, Calcifying Epithelial Odontogenic Tumour, Adenomatoid Odontogenic Tumour, Squamous Odontogenic Tumor
- b. Odontogenic epithelium with Odontogenic ectomesenchyme with or without hard tissue formation-- Ameloblastic Fibroma, Ameloblastic Fibro-odontoma, Odontoma, Dentinogenic Ghost cell Tumor
- c. Odontogenic ectomesenchyme with or without included Odontogenic epithelium- Peripheral and Central Odontogenic Fibroma, Odontogenic Myxoma, Benign Cementoblastoma.

MALIGNANT

- a. Odontogenic carcinomas : Metastasizing ameloblastoma, Ameloblastic carcinoma

5. Regressive alterations of teeth

(2 hrs)

- a. Attrition, abrasion, erosion, abfraction
- b. Dentinal sclerosis, dead tracts, secondary dentin, pulp calcifications
- c. Resorption of teeth (internal & external)
- d. Hypercementosis and Cementicles

6. Infections of the Oral cavity

(10 hrs)

- a. Bacterial Infections: Scarlet fever, Diphtheria, Tuberculosis, Syphilis, actinomycosis, Tetanus, Noma.
- b. Viral Infections : Herpes Simplex, Measles, Mumps, Chicken Pox, Herpes Zoster, Cytomegalic Inclusion disease, H.I.V and Oral Manifestations of AIDS
- c. Fungal Infections : Candidiasis, Histoplasmosis, Phycomycosis and Rhinosporidiosis.

7. Allergic and Immunological Diseases of the Oral cavity

(2 hrs)

- Immunological Diseases: Recurrent Aphthous Stomatitis, Bechet's Syndrome, Reiter's Syndrome, Sarcoidosis, Wegener's Granulomatosis
- Allergic Diseases: Angioedema, Stomatitis Medicamentosa, Stomatitis Venenata

8. Spread of Oral Infection

(2 hrs)

- a. Cellulitis, Ludwig's Angina, Intra Cranial Complication of Dental Infection, Maxillary sinusitis, Focal Infection and foci of Infection (Definition, Mechanism and significance)

9. Physical and Chemical Injuries of the Oral Cavity

(5 hrs)

- a. Physical Injuries of Teeth
 - Bruxism, Ankylosis
- b. Physical Injuries of Bone
 - Traumatic Bone Cyst
- c. Physical Injuries of Soft tissues
 - Traumatic Ulcer, Denture Injuries of the Mucosa, Mucous Retention Phenomena
- d. Chemical Injuries of Oral Cavity
 - Aspirin Burn
 - Lead, Mercury and Bismuth Poisoning
 - Acrodynia
 - Silver poisoning
 - Dilantin sodium -induced gingival enlargement
 - Tetracycline
- e. Effects of Radiation on bone and Oral Mucosa

10. Biopsy, Cytology and Healing of Oral Wounds

(5 hrs)

- Factors affecting the healing of wounds
- Healing of Extraction Wound and Dry Socket
- Healing of Fracture
- Biopsy:
- Biopsy Techniques, Processing Of Tissues With A Brief Account Of Routine Stains Used, Healing Of The Biopsy Wound
- Basic Aspects of Cytology:
- Indications, Staining of Cytosmears, Interpretation of Cytosmears
- Re-Implantation and Transplantation of Teeth

11. Disease of Bone

(8 hrs)

- Genetic:
- Osteogenesis Imperfecta, Cleidocranial Dysplasia, Craniofacial Dysostosis, Mandibulofacial Dysostosis, Pierre Robin Anomalad, Marfan's Syndrome, Down's Syndrome, Osteopetrosis, Achondroplasia, Cherubism
- Fibro-Osseous Lesions
- Fibrous Dysplasia
- Cemento-osseous dysplasias
- Unknown Etiology:
- Paget's Disease, Histiocytosis-X-Disease
- Disorders of the Temproromandibular Joint:
- Developmental disturbances of the TMJ
- Ankylosis of the TMJ
- Subluxation and luxation
- Myofascial pain dysfunction syndrome

12. Blood Dyscrasias

(4 hrs)

- Clinico-pathological aspects and oral manifestations of Anemias, Polycythemia, Leukopenia, Neutropenia, Agranulocytosis, Chediak-Higashi Syndrome, Leukocytosis, Infectious mononucleosis, Leukaemias, Purpura, Haemophilia

13. Diseases of Periodontology

(5 hrs)

- Stains, Calculus, Dental Plaque
- Gingivitis, Acute Necrotizing Ulcerative Gingivitis (ANUG), Gingival hyperplasia, Periodontitis, Juvenile periodontitis

14. Diseases of Skin

(10 hrs)

- Hereditary:
- Hereditary Ectodermal Dysplasia, Chondroectodermal Dysplasia, Dyskeratosis Congenita, White Sponge Nevus, Hereditary Benign Intra Epithelial Dyskeratosis, Ehler-Danlos Syndrome
- Immune-mediated:

- Lichen Planus, Pemphigus, Benign Mucous Membrane Pemphigoid, Cicatricial Pemphigoid, Psoriasis, Erythema Multiforme, Epidermolysis Bullosa, Scleroderma, Lupus Erythematosus

15. Defence Mechanisms of the Oral Cavity (1 hrs)

16. Introduction to Forensic Odontology (2hrs)

- Introduction, definition, aims & scope.
- Sex and ethnic (racial) differences in tooth morphology and histological age estimation
- Determination of sex & blood groups from buccal mucosa/ saliva
- Dental DNA methods
- Bite marks, rugae patterns and lip prints
- Dental importance of poisons and corrosives
- Overview of forensic medicine and toxicology

17. Oral Aspects Of Metabolic Disease: (5 Hrs)

- Oral Aspects of Disturbances in Mineral Metabolism: Calcium, Phosphorus, Magnesium, Zinc, Fluorine, Iron
- Oral Aspects of Avitaminoses and Hypervitaminoses: Vitamin A, Vitamin D, Vitamin C, Vitamin B complex
- Oral Aspects of Disturbances in Hormone Metabolism: Hypopituitarism, Hyperpituitarism, Hyperthyroidism, Hypothyroidism, Hypoparathyroidism, Hyperparathyroidism, Addison's disease, Cushing's Syndrome, Diabetes Mellitus

18. Diseases of Nerves: (2hrs)

- Trigeminal neuralgia, Sphenopalatine neuralgia, Frey's Syndrome, Burning Mouth Syndrome

Oral Microbiology (3 Hrs)

1. Normal Oral Microbial Flora
2. Microbiology of Dental Caries
 - Streptococcus mutans, Lactobacillus acidophilus, Actinomyces israelii, Veillonella
3. Microbiology of Periodontal Diseases:
 - Borrelia vincentii, Fusobacteria, Actinomycetes actinomycetum-comitans
4. Microbiology of Oral Infections:
 - Bacteria: Mycobacterium tuberculosis, Treponema pallidum
 - Viruses: Herpes group of viruses, Human immunodeficiency virus
 - Fungi: Candida albicans

Practicals : 80 hours

- a. Identification of Hard and Soft Tissue Specimens
- b. Demonstration of Cytosmear and bacteriology smear
- c. Identification of Microscopic slides of Various Oral Lesions

Identification of the histopathologic slides of the following lesions :

1. Pit & fissure caries
2. Smooth surface caries
3. Dental caries - liquefaction foci
4. Pulp polyp
5. Periapical granuloma
6. Dentigerous cyst
7. Radicular cyst
8. Cholesterol clefts / cholesterol crystals
9. Rushton bodies
10. Calcifying odontogenic cyst
11. Mucocele
12. Leukoplakia
13. Carcinoma-in-situ
14. Oral submucous fibrosis (h/e)
15. Fordyce's spots
16. Papilloma
17. Fibroma
18. Lipoma
19. Capillary hemangioma
20. Cavernous hemangioma
21. Lymphangioma
22. Schwannoma
23. Well differentiated squamous cell carcinoma
24. Moderately differentiated squamous cell carcinoma
25. Verrucous carcinoma
26. Malignant melanoma
27. Osteosarcoma
28. Pyogenic granuloma
29. Fibrous dysplasia
30. Ossifying fibroma
31. Paget's disease
32. Osteomyelitis (acute)
33. Osteomyelitis (chronic)
34. Peripheral giant cell granuloma
35. Central giant cell granuloma
36. Ameloblastoma (follicular)
37. Ameloblastoma (plexiform)
38. Ameloblastoma (granular cell variant)
39. Adenomatoid odontogenic tumour
40. Cementoblastoma
41. Ameloblastic fibroma
42. Compound odontome
43. Pleomorphic adenoma, preferably with metaplastic areas
44. Warthin's tumour
45. Mucoepidermoid carcinoma (high grade)

46. Mucoepidermoid carcinoma (low grade)
47. Adenoid cystic carcinoma (pas)
48. Necrotizing sialometaplasia
49. Lichen planus with civatte bodies
50. Pemphigus
51. Tuberculosis
52. Actinomycosis
53. Candidiasis

ADDITIONAL TOPICS:

1. Ultrastructural features, Immunofluorescence techniques for muco-cutaneous lesions and viral infections
2. Basics of immunology
3. Different type of Microscopy used in the diagnosis of oral lesions
4. Syndromes

Scheme of Examination

A. Theory : 70 Marks

Distribution of Topics and Type of Questions

Contents	Type of Questions and Marks	Marks
Both questions from Oral Pathology only	Long Essays 02 x 10 marks	20
a. 6 questions on Oral pathology b. 2 questions on Oral microbiology	Short Essays 08 x 5 marks	40
a. 4 questions on Oral pathology b. 1 question on Oral microbiology	Short Answers 05 x 2marks	10
	Total	70

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 Marks, Practicals : 10marks

D. PRACTICALS : 90 Marks

Spotters (total 15 spotters)

1. Specimen : Identification & Points in Support 6x5 = 30 marks
2. Slides : Slides, diagrams, Labelling & Salient features, 12 slides 12x5 = 60 marks

Text Books Recommended :

Name of the Book & Title	Author	Edn.	Publisher's Name and Place of Publication	Price
Oral pathology -Clinical Pathologic Correlation	Regezi & Scuibia	5th	W. B. Saunders ? Company USA, 2007	\$ 25
Shafer's Text Book of Oral Pathology	R. Rajendran B. Sivapathasundharam	6th	Elsevier, 2009	Rs. 876/-
Text Book of Oral and Maxillofacial Pathology	Neville, Damm, Allen, Bouquot	3rd	Elsevier, 2009	-
Essentials of Oral Microbiology	Lakshman P Samaranayake	3rd	Churchill Livingstone, 2006	\$ 86.95

Other suggested reading

1. Sapp, Eversole, Wysocki : Contemporary Oral And Maxillofacial Pathology, 3rd edition
2. R B Lucas: Pathology of tumors of oral tissues, 5th edition
3. Peter.A.Reichart, Hans P.Philipsen: Odontogenic tumors and allied lesions
4. Mervyn Shear, Paul M.Speigh: Cysts of oral and maxillofacial regions, 4th edition
5. S R Prabhu: Oral diseases of the tropics
6. Roitt, Lehner: Oral Immunology
7. Russel J Nisengard, Michael G Newman: Oral Microbiology & Immunology, 2nd edition
8. John Eveson, Crispian Scully: Colour atlas of oral pathology

III BDS

ORAL MEDICINE AND RADIOLOGY

THEORY: 20 HOURS

PRACTICALS: 70 HOURS

MUST KNOW

III YEAR ORAL MEDICINE THEORY: 12 HOURS

1. Introduction to Oral Medicine- Definition Scope and Clinical Applications	1 hour
2. Principles of oral diagnosis <ul style="list-style-type: none"> - Definitions. - Importance of diagnosis and various types of diagnosis - Case history and components. - Physical examination methodologies - general examination, extra oral & neck examination , intra oral examination - Concepts of provisional diagnosis, differential diagnosis. - Clinical chair side investigations and radiological investigations, exfoliative cytology; hematological, microbiological, histopathological investigations. - Special investigations --biochemical, sialochemical studies, serology, immunological studies. - Final /confirmed diagnosis. - Formulation of treatment plan & prognosis - Referral for opinions. <p>Examination of swelling, ulcer, erosions, sinus, fistula, pigmented lesions, red and white mucosal lesions, pain, TMJ, and lymphnodes</p> <p>Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post mortem identification; jurisprudence and ethics.</p>	3hour
3. Regressive alterations of teeth, Developmental malformations, discoloration of teeth.	1 hour
4. Principles, procedures, and protocol for asepsis, sterilisation, infection control.	1 hour
5. Oral sepsis and its effect on general system. Inflammation- injury, infection and spread of infection, facial space infections, osteoradionecrosis.	1 hour
6. Periapical Diseases, And Diseases Of Dental Pulp, Diagnosis Of Dental Caries, Periodontal Diseases Such As Gingival Hyperplasia, Gingivitis, Periodontitis, Pyogenic Granuloma	1 hour
7. Differential diagnosis of orofacial pain: <ol style="list-style-type: none"> Pain arising from diseases of orofacial tissues like teeth, pulp, gingival and periodontal tissues, mucosa, tongue, muscles, blood vessels, lymph nodes, bone, paranasal sinuses, salivary glands etc. 	2 hour

<p>ii. Pain arising due to CNS diseases: pain due to intracranial and extracranial involvement of cranial nerves. (multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.). Neuralgic pain due to unknown causes: trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain.</p> <p>iii. Referred pain: pain arising from distant tissues & organs like heart, spine etc.altered sensations like cocageusia, halitosis.</p> <p>Neuromuscular disorders:</p> <p>i. Nerves: (a) neuropraxia, (b) neurotemesis (c) neuritis (d) facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and Ramsay Hunt syndrome (e) neuroma (f) neurofibromatosis (g) Frey's syndrome.</p> <p>ii. Muscles: (a) Myositis ossificans (b) Myofacial pain dysfunction syndrome (c) trismus.</p>	
<p>8. Orofacial Pigmentation: Exogenous And Endogenous Pigmentations</p>	<p>1 hour</p>
<p>9. Pharmcotherapeutics : General therapeutic measures- drugs commonly used in oral medicine viz. Antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, corticosteriods, antiviral drugs, antifungal drugs, antitubercular drugs, antihistamines, immunomodulators, immunosuppressive drugs, sialogogues, antisialogoguges.</p>	<p>1 hour</p>

III BDS

ORAL MEDICINE AND RADIOLOGY

Radiology

III YEAR THEORY : 8 Hours

1. Introduction to Oral Radiology -History, origin, Definitions, scope & limitations.	1 hour
2. Basic physics in radiology <ul style="list-style-type: none"> - Radiographic equipment - Radiographic accessories (film holders, beam directional devices, intensifying screens, extra oral cassettes, grids etc.) - Radiographic image receptors Factors responsible for ideal radiographs: <ol style="list-style-type: none"> KvP and ma of X-ray machine Filters Collimations Intensifying screens Grids Faulty radiographs and artefacts in radiographs.	1 hour
- Production of X rays (dark room procedures, composition of developer fixer, safe lighting, processing technique- manual/ automatic, storage of films)	1 hour
<ul style="list-style-type: none"> - Properties of X rays - Sources of radiation. - Electromagnetic spectrum & types of radiation - Electro physical factors - Collimation, Filtration - Films - Principles of Shadow Casting - Projection Geometry - Object localization techniques 	2 hour
3. Principles of Intra oral Radiography, techniques, indications of - IOPA Bitewing, Occlusal radiography - lecture	1 hour
4. Radiographic interpretation - I <ul style="list-style-type: none"> - Principles, procedures. - Normal radiographic landmarks of jaws & adjacent structures. - Radiographic interpretations & differential diagnosis in dental caries periodontal diseases, periapical disease 	2 hour

III BDS

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details - III Year B.D.S and IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	III Year B.D.S	IV Year B.D.S
Theory	20 Hours	30 Hours
Clinical	70 Hours	130 Hours
Total	90 Hours	160 Hours

III YEAR B.D.S - COURSE SYLLABUS:

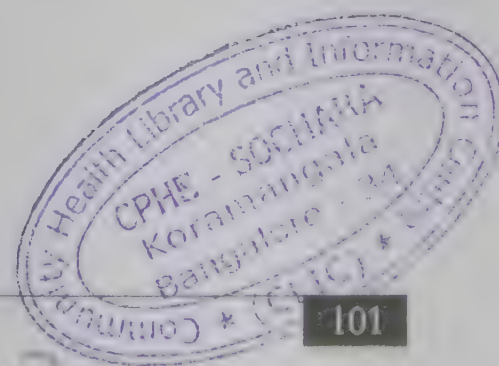
Subject	Hours
1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.	1 Hour
2. Growth and Development: In General <ul style="list-style-type: none"> a. Definition b. Growth spurts and Differential growth c. Factors influencing growth and development d. Methods of measuring growth e. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial) f. Genetic and epigenetic factors in growth g. Cephalocaudal gradient in growth Morphologic Development of Craniofacial Structures <ul style="list-style-type: none"> a. Methods of Bone growth b. Prenatal growth of craniofacial structures c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion 	6 Hours
3. Functional Development of Dental Arches and Occlusion <ul style="list-style-type: none"> a. Factors influencing functional development of dental arches & occlusion b. Forces of occlusion c. Wolfe's law of transformation of bone d. Trajectories of forces Clinical Application of Growth and Development	2 Hours
4. Malocclusion - In General <ul style="list-style-type: none"> a. Concept of normal occlusion 	3 Hours

<ul style="list-style-type: none"> b. Definition of malocclusion c. Description of different types of Dental, skeletal and functional malocclusion <p>Classification of Malocclusion</p> <p>Principle, description, advantages and disadvantages of classification of malocclusion by Angle and modification, Simon, Lischer and Ackerman and Proffitt.</p>	
5. Normal and Abnormal Function of Stomatognathic System	1 Hour
<p>6. Aetiology of Malocclusion</p> <ul style="list-style-type: none"> a. Definition, importance, classification, local & general aetiological factors b. Etiology of following different types of malocclusion <ul style="list-style-type: none"> i. Midline diastema ii. Spacing iii. Crowding iv. Cross-Bite: Anterior / Posterior v. Class III Malocclusion vi. Class II Malocclusion vii. Deep Bite viii. Open Bite 	3 Hours
<p>7. Diagnosis and Diagnostic Aids</p> <ul style="list-style-type: none"> a. Definition, Importance and classification of diagnostic aids b. Importance of case history and clinical examination in orthodontics c. Study Models: - Importance and uses - Preparation and preservation of study models d. Importance of intraoral X-rays in orthodontics e. Panoramic radiographs - Principles, Advantages, Disadvantages and uses f. Cephalometrics: Its advantages and disadvantages <ul style="list-style-type: none"> i. Definition ii. Description and use of cephalostat iii. Description and uses of anatomical landmarks lines and angles used in cephalometric and analysis iv. Analysis - Steiner's, Down's, Tweed's. Ricket's E-line g. Electromyography and its use in orthodontics h. Wrist X-rays and its importance in orthodontics 	4 Hours

CLINICALS AND PRATICALS IN ORTHODONTICS DURING III B.D.S - 70 Hours

PRATICAL TRAINING DURING III B.D.S

1. Basic wire bending exercises Gauge 22 or 0.7mm
 - a. Straightening of wires (4 Nos)
 - b. Bending of equilateral triangle
 - c. Bending of a rectangle
 - d. Bending of a square
 - e. Bending of a circle



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- f. Bending of U.V.
2. Construction of Clasps (upper / lower) Gauge 22 or 0.7mm
 - a. $\frac{3}{4}$ clasp (C-Clasp)
 - b. Full clasp (Jackson's Crib)
 - c. Adam's Clasp
 - d. Triangular Clasp
3. Construction of Springs (On upper both sides) Gauge 24 or 0.5mm
 - a. Finger Spring
 - b. Single Cantilever Spring
 - c. Double Cantilever Spring (Z-Spring)
 - d. T-Springs on premolars
4. Construction of Canine retractors Gauge 23 or 0.6mm
 - e. U - loop canine retractor (Upper and lower)
 - f. Helical canine retractor (Upper and lower)
 - g. Buccal canine retractor: - Self supported Buccal canine retractor with
 - i. Sleeve - 5mm wire of 24 Gauge
 - ii. Sleeve - 19 Gauge needle on any one side
 - h. Palatal canine retractor on upper both sides - Gauge 23 or 0.6mm
5. Labial Bow
 - i. Gauge 22 or 0.7mm
 - j. One on both upper and lower

CLINICAL TRAINING DURING III B.D.S

1. Making upper Alginate impression
2. Making lower Alginate impression
3. Study model preparation
4. Model Analysis
 - a. Pont's Analysis
 - b. Ashley Howe's Analysis
 - c. Carey's Analysis
 - d. Bolton's Analysis
 - e. Moyer's Mixed Dentition analysis
 - f. Hakhoba's Analysis

III BDS

PEDIATRIC AND PREVENTIVE DENTISTRY

Teaching hours: Theory: 65 Hours,
Pedodontics and Preventive Dentistry Lectures
Practicals/Clinics: 170 Hours

III Year: 70 Hours

IV Year: 100 Hours

Theory

III Year: 20 Hours

IV Year: 45 Hours

III YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 20 HOURS

1. Introduction to Pediatric and Preventive Dentistry - Definition, Scope, Objectives and Importance	1 hours
2. Growth and Development(will be covered by department of orthodontics also) - Importance of study of growth and development in Pedodontics - Prenatal and postnatal factors in growth and development - Theories of growth and development - Methods to measure growth - Development of maxilla and mandible and age related changes	2 hours
3. Development of Occlusion from birth to adolescence - Mouth of neonate, gumpads - Primary dentition period - Mixed dentition period - Establishment of occlusion - Study of variations and abnormalities	2 hours
4. Dental Anatomy and Histology - Chronology of eruption of teeth - Differences between primary and permanent teeth - Eruption disorders and their management including teething, ectopic eruption, ankylosis - Importance of first permanent molar	2 hours
5. Dental Caries - Diagnostic procedures and caries detection - Caries pattern in primary, young permanent and permanent teeth - Early childhood caries, rampant caries-definition, classification,etiology, pathogenesis, clinical features, complications and management	3 hours

<ul style="list-style-type: none"> - Role of diet and nutrition in dental caries & sugar substitutes - Diet counselling and diet modifications - Caries activity tests, caries prediction, susceptibility and their clinical application 	
6. Dental materials used commonly in children and adolescents (outline revision)	1 hour
7. Case history recording <ul style="list-style-type: none"> - Principles of history taking, examination, investigations, diagnosis and treatment planning 	1 hour
8. Pediatric operative dentistry <ul style="list-style-type: none"> - Principles of operative dentistry - Isolation-importance and techniques - Modifications in cavity preparation and recent cavity designs for primary and young permanent teeth - Atraumatic/ Alternative Restorative Technique (ART) - Other methods of caries removal - Restoration of carious teeth (primary, young permanent and permanent teeth) using various restorative materials like glass ionomers, composites, silver amalgam - Preformed crowns: stainless steel, polycarbonate and strip crowns 	5 hours
9. Gingival and periodontal diseases in children <ul style="list-style-type: none"> - Normal gingival and periodontium in children - Definition. Classification - Aetiology, pathogenesis and management of gingival and periodontal conditions seen in children and adolescents 	2 hours
10. Dental radiology as related to Pedodontics	1 hour

III BDS

ORAL AND MAXILLOFACIAL SURGERY

Total Thoery Teaching hours : 70 hours

Total Practicals/ Clinicals: 270 hours

III year : 20 hours Theory , 70 Clinical hours

IV year : 20 hours Theory , 200 Clinical hours

III year BDS Theory: 20 hours

Lesson No	Topic	Details of the Topic	Duration
1.	Introduction	Definition, Aims & objectives of Oral surgery	1 hour
2.	Diagnosis in oral surgery	History Taking	2 hours
		Clinical Examination	
		Investigations	
3.	Infection control	Principles of infection control	1 hour
		Cross infection , HIV/AIDS and hepatitis	
4.	Local Anaesthesia	Neurology of facial pain Historical aspects, definition, types of LA, indications, contraindications, advantage and disadvantage. Local anaesthetic drugs, Classification Ideal requirements of LA solutions, composition and mode of action Choice of particular mode of anaesthesia Complications of LA, prevention and management. Anaesthesia technique- Mandible Anaesthesia technique- Maxilla	5 hours 2 hours 2 hours
5.	Exodontia	Introduction, indications, contra indication	1 hour
		Methods of extraction	1 hour
		Use of instruments and complications - prevention and management	2 hours
6.	Medical Emergency		3 hours
7.	Medically Compromised Patients		
		Total	20 hours

Text Books:

Alling John F et al	Impacted teeth
Peterson L J et al	Principles of Oral and Maxillofacial Surgery Vol 1,2 & 3
Srinivasan B	Textbook of Oral and Maxillofacial Surgery
Malamed S F	Handbook of medical emergencies in the dental office
Banks P	Killey's fracture of mandible
Banks P	Killey's fracture of middle third of the facial skeleton
McGovanda	The Maxillary sinus and its dental implication
Seward G R et al	Killey and Kays outline of oral surgery Part I
Mc Carthy F M	Essentials of safe dentistry for the medically compromised patients
Laskin D M	Oral and Maxillofacial Surgery
Howe G L	Extraction of teeth
Howe G L	Minor oral surgery
Peterson I J et al	Contemporary Oral and Maxillofacial Surgery
Topazian R G & Goldberg M H	Oral and Maxillofacial infections
Malamed S F	Hand book of Local Anaesthesia
Monheim's	Text book of Local Anaesthesia

Practical and Clinicals hours

III year BDS : 70 clinical hours.
Students are required to learn the following exercises:

- Case history taking
- Examination of the patient
- Recording blood pressure
- Use of different instruments in Oral & Maxillofacial surgery
- Various local anaesthetic injection techniques on patients

Practical and Clinicals Quota

Year	Clinical exercises	Quota	Category
III year BDS:			
	Various local anaesthetic injection techniques on patients	10 cases	must do
	Wiring techniques on models	1 exercise	must do
	Suturing techniques on models.	1 exercise	must do

III BDS

PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

Teaching Hours:

Clinical: III year: 70 hours
IV year: 300 hours

Theory: III year: 30 hours
IV year: 80 hours

III year Prosthodontics Theory: 30 hours

<p>1. Introduction</p> <ul style="list-style-type: none">a. Terminology - Definitions - History - Scope in Prosthodontic therapyb. Stomatognathic system, Craniomandibular system (Masticatory apparatus)c. Components of masticatory apparatus - Functionsd. Applied Anatomy. Histology & Physiology of the components of mandibular system.e. Applied growth and development including genetics, immunity.f. Reasons for loss of teeth and associated structures.g. Clinic and laboratory - facilities for Prosthodontic therapy (Equipments, instruments, materials).h. Prosthodontic therapy for diseases of craniomandibular system.i. Asepsis and cross infection control in clinic and laboratory. Hospital laboratory waste disposal system and management. <p>Physiology, nutrition, occlusion, occlusal curves, vertical overlap, horizontal overlap, condylar path, saliva, pain and other reflexes. Neuro muscular mechanism and applied psychiatry medicine</p> <p>COMPLETE DENTURE PROSTHESIS</p>	1 hour
<p>2. BIOMECHANICS OF THE EDENTULOUS STATE</p> <p>Mechanism of tooth support Mechanism of complete denture support Masticatory load Mucosal support Residual ridge Psychologic effect on retention Functional and Para functional considerations Occlusion Functions: Mastication & swallowing</p>	2 hours

<p>Mandibular movements</p> <p>Para-functions</p> <p>Distribution of stresses to the denture supporting tissues, changes in morphological face height and the temporomandibular joint</p> <p>Face height</p> <p>Centric relation</p> <p>Temporomandibular joint changes</p> <p>Individual behavioral or adaptive response</p> <p>Cosmetic changes</p> <p>Dietary changes</p> <p>Adaptive and psychological changes</p> <p>Adaptive potential of the patient</p>	
<p>3. Tissue response to complete denture prosthesis in the aging edentulous patient</p> <p>Soft tissue changes</p> <p>Soft tissue hyperplasia</p> <p>Denture stomatitis</p> <p>Treatment of denture stomatitis</p> <p>Denture sore mouth</p>	1 hour
<p>4. Effects of aging</p> <p>Oral changes</p> <p>Mucosa and skin</p> <p>Residual bone and the Maxillo-mandibular Relation</p> <p>Disuse atrophy</p> <p>Changes in the size of the basal seat</p> <p>Maxillo-mandibular relations</p> <p>Tongue and taste</p> <p>Salivary flow and nutritional impairment</p> <p>Degenerative changes</p> <p>Dietary problems</p> <p>Psychologic changes</p>	1 hour
<p>5. Preparing the patient for complete denture prosthesis</p>	1 hour
<p>6. Diagnosis and treatment planning for patient with some teeth remaining</p> <p>Diagnostic procedures</p> <p>History and records</p> <p>Immediate complaints</p> <p>Systemic evaluation - CVS, respiratory, Renal, Endocrines, CNS and other systemic conditions</p> <p>Temporomandibular joint disorders</p> <p>Intra Oral examination</p> <p>Diagnostic cast</p> <p>Interarch space problems</p> <p>Radiographs & other investigations</p>	3 hours

<p>Treatment plan</p> <p>Deciding whether to extract the remaining teeth</p> <p>Pre extraction record</p> <p>The patient recently made edentulous</p> <p>New Problems of the recently edentulous patient</p> <p>The patient's concept of the permanence of dentures</p> <p>The patient edentulous for a long time</p> <p>Mental attitudes & classification</p> <p>The House classification: Philosophic</p> <p>Indifferent</p> <p>Critical</p> <p>Skeptical</p> <p>Application of the house classifications</p> <p>Desires and expectations</p>	
<p>7. Diagnosis of patient with no teeth remaining</p> <p>Examination charts and records</p> <p>General observations affecting diagnosis</p> <ul style="list-style-type: none"> - age, sex, occupation, ethnic - general health & nutrition - social training - patient complaints - gait - lip support - lip thickness - lip length - lip fullness - profile and contour of features - tone of the facial tissues - vertical face length <p>Radiographic and intraoral examination</p> <ul style="list-style-type: none"> - advantages of a radiographic examination - intra oral examination - color, resiliency and attachments of the mucosa - abrasions & ulcers - pathoses - the maxillary basal seat - torus palatinus - adhesions - The mandibular basal seat - Arch size <p>Disharmony in jaw sizes</p> <p>Ridge form</p> <p>Ridge relations</p> <p>Arch shape</p> <p>Sagittal profile of the residual ridge</p> <p>Shape of the palatal vault</p> <p>Relation of the hard and soft palate</p>	<p>2 hours</p>

<p>Muscular development</p> <p>Saliva</p> <p>Checks and lips</p> <p>Muscle tonus</p> <p>Muscular control</p> <p>Jaw movements</p> <p>Temporomandibular joint problems</p> <p>Tongue size and position</p> <p>Throat form</p> <p>Gagging</p>	
<p>8. Development of treatment plan</p> <p>Communicating with the patient</p> <ul style="list-style-type: none"> - Nutrition care of the denture patient - Nutritional needs and status of the elderly - Impact of wearing dentures on dietary intake - calcium and bone health - vitamin supplementation - Nutrition counseling 	1 hour
<p>9. Identification and management of the patient with problems</p> <p>Basic rules to follow to avoid problems</p> <ul style="list-style-type: none"> - Conduction of the comprehensive examination - Correctional procedures prior to making prosthesis - Patient behavior characteristics observed during the examination appointment that may indicate future management problems - Disrupting regular office routine - Overreacting to normal examination procedures - Downgrading or criticizing treatment provided by a previous dentist <p>Refusing to divulge the name of a previous dentist or dentists</p> <p>Not having paid for previous dental care</p> <p>Dissatisfaction with existing prosthesis that does not coincide with your evaluation of the prosthesis</p> <p>Numerous sets of prostheses made in a short time(for example, / three in two years)</p> <p>Unrealistic desires to change facial appearance</p> <p>Recent major catastrophe in the immediate family(such as a death, divorce, or severe illness)</p> <p>Legal action pending with the former dentist</p> <p>History of severe gagging and inability to wear prosthesis</p> <p>Crying during discussion of previous dental experience</p> <p>Evidence of excessive smoking</p> <p>Evidence of severe bruxing and/or clenching</p> <p>Restlessness in the dental chair</p> <p>When and how to refer the patient to a specialist for treatment</p> <p>Background information</p> <p>Procedures</p>	1 hour

<p>10. Use of Consultation Report Contents of the Report Economics of prosthodontic service Improving the patient's denture foundation and ridge relations Nonsurgical Methods Rest for the prosthesis supporting tissues Occlusal and vertical dimension correcting of old prostheses Good nutrition and Conditioning of the patient's musculature Surgical Methods correcting conditions that preclude optimal prosthetic function Hyperplastic ridge, epulis fissuratum, and papillomatosis Frenular attachments and pendulous maxillary tuberosities Bony prominences, undercuts, spiny ridges, and nonparallel bony ridges Discrepancies in jaw size Pressure on the mental foramen Enlargement of denture-bearing areas Vestibuloplasty Ridge augmentation Replacing tooth roots by Osseo integrated dental implants Management of remaining teeth and pulp for over dentures</p>	<p>3 hours</p>
<p>11. Rehabilitation of the Edentulous Patient Biologic considerations for Maxillary Impressions Macroscopic Anatomy of Supporting Structures - support for the maxillary denture - Residual ridge - Stress-bearing areas - incisive papilla - posterior palatal area - bone of the basal seat Macroscopic Anatomy of Limiting Structures - Resistant and non resistant areas (Peripheral valvular sealing area of a prosthesis) - Labial frenum - Orbicularis oris - Buccal frenum - Buccal vestibule - Pterygomaxillary notch - Palatine fovea region - Vibrating line of the palate Microscopic anatomy - Histologic nature of soft tissue and bone - Microscopic anatomy of supporting tissues - Microscopic anatomy of limiting structures</p>	<p>2 hours</p>
<p>12. Clinical considerations of microscopic anatomy Maxillary Impression Procedures Principles and objectives of Impression making</p>	<p>2 hours</p>

<p>Factors of retention of Dentures</p> <p>Physical factors</p> <ul style="list-style-type: none">- Adhesion- Cohesion- Interfacial surface tension- Capillary attraction- Atmospheric pressure <p>Anatomic factor</p> <p>Mechanical factors</p> <p>Acquired muscular control</p> <p>Oral and facial musculature</p> <p>Balanced occlusion</p> <p>Health of the basal seat tissues</p> <ul style="list-style-type: none">- Inflammation of the mucosa- Distortion of the denture-foundation tissues- Excessive amounts of hyper plastic tissue- Degeneration of mucous membrane- Insufficient space between the upper and lower ridges <p>Impressions for the edentulous patient</p> <p>Primary impression-Patients position, operators position, stock trays, materials & step by step procedure for making primary impression</p> <ul style="list-style-type: none">- Impression trays-special trays and design for final impression- Final impression materials <p>Impression techniques</p> <ul style="list-style-type: none">- First technique-border molded special tray- Second technique-one step border molded tray- Third technique-custom tray design based on the previously worn prosthesis	
<p>13. Biologic considerations for mandibular impressions</p> <p>Sequelae of tooth loss</p> <p>Macroscopic Anatomy of the supporting structures</p> <ul style="list-style-type: none">- Crest of the residual ridge- Buccal flange area and the buccal shelf- flat mandibular ridges- bone of the basal seat- stages of change in the mandible- mylohyoid ridge- throat form and tongue positions- mental foramen area resorption- insufficient space between the mandible and the tuberosity- low mandibular ridges- direction of ridge resorption- torus mandibularis <p>Macroscopic Anatomy of Limiting Structures</p> <p>Buccal and labial borders</p> <p>Buccal vestibule</p> <p>External oblique ridge and the buccal flange</p>	2 hours

<p> Masseter muscle region Distal extension of the mandibular impression Retromolar region and pad Lingual borders Influence and action of the floor of the mouth Mylohyoid muscle and mylohyoid ridge Sublingual gland region Direction of the lingual flange Alveololingual sulcus Lingual frenum and lingual notch Lingual flange Microscopic Anatomy Supporting tissues <ul style="list-style-type: none"> - crest of the residual ridge - buccal shelf </p>	
<p> 14. Mandibular Impression procedures Classification of Mandibular Impressions Aims and objectives, and theories of impression making <ul style="list-style-type: none"> - selective pressure impressions - pressure less impressions Construction Procedures <ul style="list-style-type: none"> - First technique-selective pressure mandibular impression border-molded special tray - Second technique-selective pressure mandibular impression-one step border- molded tray - Third technique-selective pressure Mandibular impression custom design based on the previously worn prosthesis </p>	1 hours
<p> 15. Biologic considerations in jaw relations and jaw movements Anatomic factors Temporomandibular Articulation Classification of Jaw relations <ul style="list-style-type: none"> - orientation relations Face bow <ul style="list-style-type: none"> - Vertical relations - Horizontal relations </p>	2 hours
<p> 16. Movements of mandible practical significance of understanding mandibular movements methods of studying mandibular movements factors that regulate jaw motion influence of opposing tooth contacts influence of tempormandibular joints axes of mandibular rotation muscular involvement in jaw motion clinical understanding of mandibular movement </p>	1 hours

<p>17. Biological considerations in vertical jaw relations</p> <p>Anatomy and Physiology of Vertical jaw Relations</p> <p>Establishment of the vertical maxillomandibular relations for complete denture prosthesis</p> <p>Methods of determining the vertical dimension</p> <ul style="list-style-type: none"> - Mechanical methods - Physiologic methods - Tests of vertical jaw relations with the occlusion rims 	1 hour
<p>18. Biological considerations in horizontal jaw relations</p> <p>Muscle involvement in centric relations</p> <p>Harmony between centric relation and centric occlusion</p> <p>Orienting centric relation to hinge axis</p> <p>Orienting centric relation and vertical relations</p> <p>Significance of centric relation</p> <p>Recording centric relation</p> <ul style="list-style-type: none"> - Methods of recording centric relation <p>Graphic, static, functional & cephalometric</p> <ul style="list-style-type: none"> - Extraoral tracing and devices - Intraoral tracing devices - Interocclusal centric relation records 	1 hour
<p>19. Recording and transferring bases and occlusion rims</p> <p>Trial denture base, or recording base</p> <p>Occlusion rims</p> <p>Guide for esthetics - Central line, lip line, canine line, smile line</p> <p>level of the occlusal plane</p> <p>preliminary centric relations records</p>	2 hours

III BDS

PERIODONTOLOGY

Knowledge:

- To have adequate knowledge and understanding of the etiology, pathophysiology, diagnosis & treatment planning of various periodontal problems.
- To have understood the periodontal surgical principles like pre and post surgical management of periodontal diseases.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of infectious disease

Skills

- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and order essential laboratory tests and interpret them and to arrive at a provisional diagnosis about the periodontal condition.
- To perform with competence various periodontal nonsurgical procedures. To treat non- surgically the various periodontal diseases.

Attitude:

- Periodontal surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.
- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

Communicative Skills and Ability:

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular periodontal problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates, present seminars and develop leadership skills

Teaching Hours: Theory: 80 Hours (III BDS-30 Hours, IVBDS- 50 Hours)

Sl. No.	Topic	Expected to know	Hours
1.	Introduction	Definition of Periodontology, Periodontics Periodontia. Brief historical background Scope of Periodontics	1
2.	Gingiva	Development, Structure, morphology, histopathology of gingival tissues, functions.	2
3.	Tooth supporting structures	Periodontal ligament, cementum and alveolar bone: functions, histology, development	2
4.	Periodontal instrumentation	Sonic, Ultra sonic instrumentation gingival irrigation manual instrumentation	1
5.	Defense mechanism in the oral cavity	Role of Epithelium; Gingival crevicular fluid ;Saliva and other defensive mechanisms in the oral environment	2
6.	Age changes in periodontal structures & their significance in geriatric dentistry	Age changes in teeth and Periodontal structures their association	1
7.	Classification of Periodontal diseases	Need for classification Scientific basis of classification. Classification of gingival and Periodontal diseases as described in World Workshop 1999.	1
8.	Gingivitis	Plaque associated, ANUG ,steroid, hormone influenced, Medication influenced, Desquamative gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.	2

9.	Periodontitis	<p>Etiology, Histopathology, Clinical signs & symptoms, diagnosis and treatment of Chronic periodontitis, Rapidly progressive periodontitis Juvenile Periodontitis: Aggressive Periodontitis Associated with Systemic Diseases, Refractory Periodontitis.</p> <p>Periodontal abscess Definition, Classification, Pathogenesis, Differential diagnosis and treatment.</p>	2
10.	Gingival Diseases	<p>Localised & generalize diseases gingivitis. Papillary, marginal and diffused gingivitis. Etiology, pathogenesis clinical signs, symptoms and management of-Plaque-associated gingivitis Systemically aggravated gingivitis (Sex hormones, Drugs and systemic diseases) Necrotizing ulcerative gingivitis Desquamative gingivitis associated with Lichen planus, pemphigoid pemphigus and other Vesiculobullous lesions. Allergic gingivitis Infective gingivitis - Herpetic, bacterial and candidial, pericoronitis. Gingival diseases in childhood</p>	2
11.	Gingival enlargement	Types of Gingival enlargement (Classification and differential diagnosis)	1
12.	Epidemiology of Periodontal disease	<p>Definition of index, Incidence, Prevalence. Classification of indices. (Irreversible & reversible) Deficiencies of earlier indices used in Periodontics Detailed understanding of Sillness & Loe Plaque index, Loe and Sillness gingival index, CPITN & CPI. Prevalence of periodontal diseases in India and Other countries. Public Health significance (All these topics are covered at under community dentistry. Hence the topics may be discussed briefly however; questions may be asked from the topics for examination).</p>	2
13.	Extension of inflammation from gingiva	Mechanism of spread of Inflammation from gingiva to deeper periodontal structures. Factors that modify the spread	1
14.	AIDS and Periodontium	AIDS and Periodontium	1

15.	Etiology of Periodontal diseases	Dental Plaque (Biofilm) Definition, Types, composition ; Formation: Bacterial colonisation, Growth & maturation, Disclosing agents. Role of dental plaque in Periodontal disease. Plaque microorganisms in detail Bacteria associated with periodontal diseases. Plaque retentive factors, Materia alba, Food debris, Food impaction: Definition, Types, Etiology Hirschfelds classification, Signs, symptoms & sequelae Treatment.	2
16.	Calculus	Role of Dental calculus in disease. Definition, Types, composition, attachment, theories of formation	1
17.	Dentinal Hypersensitivity	- Causes, theories and Management.	1
18.	Habits	- Their Periodontal significance. Bruxism & parafunctional habits, Tongue thrusting, mouth breathing, lip biting, occupational habits.	1
19.	Iatrogenic factors.	Conservative Dentistry- Restorations. Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth. Prosthodontic Interrelationship- Bridges and other prosthesis, Pontics (types), surface contour, relationship of margins to the Periodontium (Theories) Orthodontics - Interrelation- Retention of plaque, bacterial changes.	1
20.	Systemic diseases	- Diabetes, Sex hormones, Nutrition (Vitamins & Proteins) Hemorrhagic disease, Leukemia, Clotting factor disorder. Platelet disorders. PMN disorders	2

Tutorial (During Clinical Posting)

1. Infection control
2. Periodontal instruments
3. Chair position and principles of instrumentation , Maintenance of instruments
4. Basic Tissues : gingiva, periodontal ligament, cementum, alveolar bone.
5. Plaque control : mechanical and chemical
6. Motivation of patient - oral hygiene instructions

Desirable to Know

1. Histochemistry of periodontal tissues
2. Masticatory apparatus and functions
3. Immunology- current concepts of host response
4. Applied periodontal microbiology
5. Advanced diagnostic techniques
6. Regeneration

Teaching Hours: Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours

Clinical work and case discussion (III BDS & IV BDS)

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

Recommended Books

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M.Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C.V.Mosby Company St. Louis
Jan Lindhe, T.Karring, N. P. Lang	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaard Copenhagen
Grant Strern. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P. Ramfjord M. M. Ash	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

III BDS
CONSERVATIVE DENTISTRY AND
ENDODONTICS

Minimum working hours for each subject of study
(BDS course)

Year	Lecture Hours	Clinical Hours	Total Hours
III year BDS:	30	70	100
IV year BDS:	80	300	380

III year

Sl. No.	Subjects	Hours
1.	Nomenclature Of Dentition: Tooth numbering systems A D A, Zsigmondy Palmer-and FDI systems	1 hour
2.	Gnathological Concepts Of Restoration: Physiology of occlusion, normal occlusion, Ideal occlusion, mandibular movements and occlusal analysis. Contours and contacts	2 hours
3.	Dental Caries Aetiology ,classification ,clinical features, morphological features, microscopic features, clinical diagnosis and sequel of dental caries	3 hours
4.	Preventive measures in restorative Practice: Plaque Control Pit and fissure sealants, dietary measures restorative procedure and periodontal health	2 hours
5.	Armamentarium for cavity preparation - Hand cutting instruments Terminology and classification Applications Design, formula and sharpening of instruments. Rotary cutting instruments Dental bur Mechanism of cutting, Common design characteristics Diamond abrasive and other abrasive instruments Cutting mechanism Hazards and precautions	2 hours

6. Isolation of operating field Purpose and methods of isolation	2 hours
7. Infection control Routes of transmission of dental infection Personal barrier protection Control of infection from aerosol and spatter Sterilization procedures for dental equipment and instruments monitoring sterilization disinfection of operatory dental water line contamination and biofilm disposal of wastes	3 hours
8. Patient assesment, examination, diagnosis, and treatment planning Patient and operator position	3 hours 1 hour
9. Principles of Cavity Preparation - Steps and nomenclature of cavity preparation classification of cavities	1 hour
10. Pain control in operative dentistry	1 hour
11. Matricing and tooth separation	2 hours
12. Amalgam Restoration- Indication, contraindication Advantages, disadvantages Cavity preparation for Class I, II.. V Step wise procedure for cavity preparation and restoration including modified designs Bonded amalgams, failure and repair of amalgam restorations	5 hours
13. Hypersensitivity of dentin Theories of hypersensitivity Management	1 hour

IV BDS

PERIODONTOLOGY

Teaching Hours: Theory: 50 Hours

Sl. No.	Topic	Expected to know	Hours
1.	Classification of periodontal diseases	Need and Scientific basis, classification of gingival and periodontal diseases - world workshop 1999.	1
2.	Risk Factors	Definition, Risk factors for periodontal diseases. Smoking and periodontal diseases, Role of Stress factors	1
3.	Genetic factors	Genetic factors associated with periodontal disease	1
4.	Host Response	Mechanism of initiation & progression of Periodontal disease, Basic concepts , cells, Mast cells, Neutrophils, macrophages, Lymphocytes, Immunoglobulins, complement, Immune Mechanisms and Cytokines in brief. Stages in gingivitis - Initial, early established, advanced Periodontal disease activity continuous paradigm, random burst and asynchronous multiple burst hypothesis	2
5.	Furcation involvement	Furcation involvement Various Classifications, prognosis and management.	1
6.	Bone loss patterns	Bone loss and patterns of bone destruction in periodontal disease	1
7.	Diagnosis	Routine procedures, methods of probing types of probes. -case history Halitosis, Etiology and treatment.	2 1
8.	Radiographic aids	Radiographs aids in the diagnosis of periodontal diseases	1
9.	Advanced diagnostic aids	Advanced diagnostic aids - Their role in brief	1
10.	Prognosis	Definition, types, purpose and factors	1
11.	Treatment plan	Factors to be considered	1
12.	Rationale for periodontal therapy	Regeneration, Repair, Re-attachment, New attachment	1

13.	Periodontitis	Etiology, histopathology, clinical signs& symptoms, diagnosis and treatment of chronic periodontitis, aggressive periodontitis, refractory periodontitis, Necrotising ulcerative periodontitis Periodontal abscess- definition, classification, pathogenesis, differential diagnosis & treatment	3
14.	Periodontal Pocket	Definition, Signs and Symptoms, Classification, Pathogenesis histopathology, root surface changes & contents of pocket.	1
15.	Periodontal treatment of medically compromised Patients	Different systemic conditions and their effects on the periodontium. Management of patients with the various systemic complications	2
16.	Periodontal therapy in the female patient	PDL changes associated with Puberty, Menopause, pregnancy, Oral contraceptives	1
17.	Periodontal therapy	General principles of periodontal therapy. Preparation of the patient for surgical therapy	1
18.	Pocket eradication	Scaling and root planing procedures Indications, Aims and Objectives. Armamentarium - and procedure Healing following root planing. Curettage and present concepts- Definition, Indication ; Aims and Objectives Procedures and healing Gingivectomy / Gingivoplasty including crown lengthening procedure-Definition Indication and contra indication Armamentarium, Procedure and healing.	2
19.	Flap Surgery	Definition of flap; Types of flap (Design of flap- papilla preservation) Pocket eradication, Indications, armamentarium, surgical procedure and healing	2
20.	Osseous surgery	Definition; Resective and additive osseous surgery (Osseous grafts, classification of grafts)-healing; other regenerative procedures root conditioning. Guided tissue regeneration.	2
21.	Mucogingival surgery	Definition; Mucogingival problems,,Etiology & Classification of gingival recession (PD.Miller Jr. and Sullivan and Atkins) Indications, various mucogingival surgical procedures	2
22.	Occlusion	Occlusal evaluation and therapy	1
23.	Microsurgery	Periodontal Microsurgery in brief, Electrosurgery, cryosurgery	1
24.	Splints	Periodontal splints - purpose, classification- principles of splinting	1

25.	Trauma from Occlusion (TFO)	Definition, types, histopathological changes, role in periodontal disease, measures of management	1
26.	Implants	Definition, Types, Scope, biomaterials used. Periodontal considerations such as implant-gingiva and implant-bone interface. Implant failure, Peri-implantitis and management. Advanced surgical techniques	3
27.	Periodontal medicine	PDL infection associated with various systemic Diseases.	1
28.	Host modulation therapy	Principles, Agents used	1
29.	Lasers	Lasers in periodontal therapy	1
30.	Supportive periodontal therapy	Definition, Rationale. Patient Classification Factors affecting S P T; Implant maintenance	1
31.	Pharmacotherapy	Periodontal dressings ; antibiotics and antiinflammatory drugs - local drug delivery	1
32.	Pulpo-periodontal Lesions	Pulpo-periodontal involvement - Routes of spread of infection management	1
33.	Evidence based decision making	Assessing evidence, implementing evidence based decisions in clinical practice	1
34.	Patient management	Ethical, legal and practical issues in the management of periodontal patients.	1

Tutorial (During Clinical Posting)

1. Third year tutorial topics
2. Diagnosis of periodontal disease
3. Determination of prognosis and treatment plan
4. Radiographic interpretation and lab investigation
5. Ultrasonic instrumentation
6. Principles of periodontal surgery
7. Periodontal surgical procedures and suturing techniques
8. Concepts of subgingival irrigation and LDD
9. Occlusion, correction, & Management
10. Splinting techniques in Periodontics

Desirable to Know

1. Immunology- current concepts of host response
2. Applied periodontal microbiology
3. Advanced diagnostic techniques
4. Regeneration
5. Application of Microsurgery and LASERS in periodontics
6. Implants

Teaching Hours: Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours

Clinical work and case discussion (III BDS & IV BDS)

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

Recommended Books

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M. Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C. V. Mosby Company St. Louis
Jan Lindhe, T. Karring, N.P. Lang	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaard Copenhagen
Grant Stern. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P. Ramfjord M. M. Ash	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

IV BDS

ORAL MEDICINE AND RADIOLOGY

Theory: 45 Hours

Practicals : 100 Hours

MUST KNOW

IV YEAR ORAL MEDICINE THEORY: 31 HOURS

<p>1. Acute infections of oral and para oral structures - bacterial, viral, fungal, parasitic including cervico facial lymphadenopathy.</p> <p>Bacterial: Streptococcal, tuberculosis, syphilis, vincent's, leprosy, actinomycosis, diphtheria and tetanus.</p> <p>Fungal: Candida albicans, deep seated fungal infections</p> <p>Virus: Herpes simplex, Herpes zoster, Ramsy Hunt Syndrome, measles, herpangina, mumps, infectious mononucleosis, HIV, hepatitis -B, hepatitis-C</p> <p>Granulomatous diseases: tuberculosis, sarcoidosis, midline lethal granuloma, Crohn's disease and histiocytosis X</p>	2 hours
<p>2. White and red lesions of oral mucosa.</p> <p>White lesions: chemical burns, leukoedema, leukoplakia, fordyce's spots, stomatitis nicotina palatinus, white spongy nevus, candidiasis, lichen planus, discoid lupus erythematosus, oral submucous fibrosis</p> <p>Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.</p>	2 hours
<p>3. Ulceerative lesions : Acute and chronic ulcers.</p> <p>Vesiculobullous lesions of oral mucosa: herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid, erythema multiforme.</p>	2 hours
<p>4. Diagnostic protocol for differential diagnosis of cysts, odontogenic, non-odontogenic and developmental cysts.</p> <p>Cysts of soft tissues : Mucoccele and Ranula</p> <p>Cysts of bone : odontogenic and non-odontogenic.</p> <p>Tumors: Soft tissue: Epithelial: Papilloma, Carcinoma, Melanoma.</p> <p>Connective tissue: Fiborma, lipoma, fibrosarcoma.</p> <p>Vascular: Haemangioma, Lymphangioma.</p> <p>Nerve tissue: Neurofibroma, traumatic neuroma, Neurofibromatosis.</p> <p>Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's tumor, Adenodid cystic carcinoma.</p> <p>Hard tissue:</p> <p>Non-odontogenic tumors:</p> <p>Odontogenic tumors:</p> <p>Fibro osseous lesions of oral paraoral structures.</p>	2 hours

<p>5. Oral manifestations of Metabolic disorders:</p> <ul style="list-style-type: none"> i. Porphyria ii. Haemochromotosis iii. histiocytosis, <p>Oral manifestations of endrocrinal disorders:</p> <ul style="list-style-type: none"> i. Pituitary: - Acromegaly, Gigantism, hypopituitarism. ii. Adrenal cortex: Addison's disease (hypofunction) Cushing's syndrome (hyper function) iii. Parathyroid glands: Hyperparathyroidism, hypoparathyroidism iv. Thyroid glands: Cretinism(hypothyroidism), myxoedema, hyperthyroidism v. Pancreas: Diabetes. <p>Nutritional difficiency affecting oral cavity: Vitamins: Riboflavin, nicotinic acid, folic acid, vitamin B12, vitamin C (scurvy)</p> <p>Blood disorders:</p> <ul style="list-style-type: none"> i. Red blood cell diseases: iron deficiency anemia, plummer Vinson syndrome, pernicious anemia, thalassemia, sickle cell anemia, erythroblastosis foetalis, aplastic anemia, polycytemia. ii. WBC disorders: Neutopenia, cyclic neutropenia, agranulocytosis, infectious mononucleosis and leukemias iii. Bleeding & clotting disorders: thrombocytopenia, purpura, haemophilia, Christmas disease and Von Willebrand's disease. 	2 hours
<p>6. Dermatological diseases importance to dentistry:</p> <ul style="list-style-type: none"> i. Ectodermal dysplasia ii. Hyperkeratosis palmoplantaris with periodontopathy iii. Scleroderma iv. Lichen planus including grinspan syndrome v. lupus erythematoses vi. Pemphigus vii. Erythema multiforme viii. Psoriasis. 	2 hours
<p>7. Disease of tongue and tongue in systemic diseases:</p> <p>Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red lesions.</p>	1 hour
<p>8. Concept of pre malignancy, Premalignant lesions and conditions</p>	1 hour
<p>9. Oral Cancer, Etiology and Classification</p> <p>Epidemiology.</p> <ul style="list-style-type: none"> - Screening. - Clinical Features and Clinical staging - Diagnosis. - Laboratory Investigations and Diagnosis. - Immune concepts in Oral Malignancies. - Management Chemotherapy / Radiotherapy. 	2 hours

<p>10. Diseases of salivary glands:</p> <ul style="list-style-type: none"> i. Developmental disturbances: Aplasia, atresia and aberration. ii. Functional disturbances : Xerostomia, ptyalism. iii. Inflammatory conditions: Non-specific sialadenitis, mumps, sarcodiosis, heerdfort's syndrome (uveoparotid fever), necrotizing sialometaplasia. iv. Cysts and tumors: Mucocoele, ranula, ;pleomorphic adenoma, mucoepidermoid carcinoma. v. Miscellaneous : sialolithiais, Sjogren's syndrome, mikuliez's disease and sialosis. 	1 hour
11. Autoimmune diseases affecting oral cavity	2 hours
<p>12. Allergic: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to drugs and chemicals)</p> <p>limmunological lesions of oral cavity:</p> <ul style="list-style-type: none"> i. Multiple myeloma ii. HIV clinical manifestations, oppourtunistic infections, neoplasms iii. Thrombocytopenia iv. Lupus erythematosus v. Scleroderma vi. Dermatomyositis vii. Rheumatoid arthritis viii. Recurrent oral ulcerations including behcet's syndrome and reiter's syndfrome. 	1 hour
<p>13. Diseases of TMJ : Developmental abnormalities of condyle, rheumatoid arthritis, osteoarthritis, subluxation and luxation, internal derangement of TMJ, myofacial pain dysfunction syndrome.</p> <p>Diseases of Bone: Development disorders, anomalies, exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, marfans syndrome, osteoporosis. Miscellaneous- Paget's disease, mono and polyostotic fibrous dysplasia, cherubism,</p>	3 hours
14. Diseases of maxillary sinus	1 hour
<p>15. Oral manifestations of systemic diseases and medical emergency management, cardiac patient,cardias arrest, specific infections, syncope, anaphylaxis.</p> <p>Phsiologic changes: Puberty, pregnancy and menopause.</p>	1 hour
16. Maxillofacial trauma clinical diagnostic protocol	1 hour
17. Psychosomatic diseases, burning mouth syndrome, glossopyrosis glossodynia, orofacial dysaesthesia, cancerophobia., MPDS, taste abnormalities	1 hour
<p>18. Forensic Odontology including radiography in forensic odontology:</p> <ul style="list-style-type: none"> i. Medicolegal aspects of orofacial injuries ii. Identification of bite marks 	1 hour

iii. Determination of age and sex iv. Identification of cadavers by dental appliances, restorations and tissue remnants.	1 hour
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IV BDS

ORAL MEDICINE AND RADIOLOGY

MUST KNOW

IV YEAR RADIOLOGY THEORY: 14 HOURS

1. Radiographic interpretation II - Radiographic artifacts.	1 hour
- Radiographic features of common pathologies of jaw bones (cysts , tumors, fibro-osseous diseases, metabolic, endocrine, nutritional blood disorders)	2 hours
- TMJ radiography -	1 hour
2. Biologic effects of radiation and radiation protection	2 hours
3. Principles of radiotherapy- preparation of patient for oral radiotherapy, management of post radiation oral complications	1 hour
4. Principles of extra oral radiography- techniques and indications of maxillary sinus, trauma radiography, cephalometry, various skull projections.	2 hours
5. Contrast radiography- technique and interpretation of Sialography, cystography, arthrography, angiography- lecture.	1 hour
6. Panoramic Radiography	1 hour
7. Advance radiographic techniques- CT scans, PET scans, radionucleide diagnosis, digital radiography, sialography, digital imaging, xeroradiography	1 hour

Clinicals

III & IV year BDS (inclusive)

ORAL MEDICINE

1. Detailed presentation of case histories of (minimum) ten special cases.

RADIOLOGY

1. Taking IOPA for at least 25 cases and processing them.
2. Taking at least 2 Bite wing radiographs and processing them.
3. Interpretation of at least 25 IOPA Radiographs.

CLINICAL DEMONSTRATIONS

- 1. Demonstrations of the following radiographic techniques:
 - a. Maxillary and mandibular occlusal view
 - b. Orthopanthamograph
 - c. Lateral cephalogram
 - d. Postero anterior view of mandible
 - e. Paranasal sinus view
 - f. Reverse townes's view
 - g. Submentovertex view
 - h. Lateral oblique view for ramus and body of mandible
- 2. Identification Of The Above Mentioned Radiographs And Their Interpretation

Scheme of Examination

A. Theory (university written examination) 70 Marks

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
a. 1 Question from Oral Medicine b. 1 Question from Radiology	Long Essays 2 x 10 marks	20
a. 4 Questions from Oral Medicine b. 4 Questions from Radiology	Short Essays 8 x 5 marks	40
a. 3 Questions from Oral Medicine b. 2 Questions from Radiology	Short Answers 5 x 2	10
	Total	70

B. Internal Assessment Theory: 10 marks, Practicals:10 marks

C. Clinicals: 90 Marks

- I. Clinicals in Oral Medicine: 60 Marks (recording of Long Case)
 - a. Case History taking 30 Marks
 - b. Diagnosis & Differential Diagnosis 10 Marks
 - c. Investigations 10 Marks
 - d. Management 10 Marks
- II. Clinicals in Radiology: 30 Marks (One Intra.a-Oral Periapical Radiograph to be taken)
 - a. Technique 10 Marks
 - b. Processing 10 Marks
 - c. Interpretation 10 Marks
- D. Viva Voce 20 Marks
 - Theory : 100
 - University written exam : 70

Viva Voce	: 20
Internal assessment (written)	: 10
Total	: 100

Clinical:100	
University exam	: 90
Internal assessment (written)	: 10
Total	: 100

BOOKS RECOMMENDED:

a. Oral Diagnosis, Oral Medicine, Oral Pathology

1. Burkit - Oral medicine - J.B. Lippincott Company
2. Coleman - Principles of Oral Diagnosis - Mosby Year Book
3. Jones - Oral Manifestations of Systemic Diseases - W. B. Saunders company
4. Mitchell - Oral Diagnosis & Oral Medicine
5. Kerr - Oral Diagnosis
6. Miller - Oral Diagnosis & Treatment
7. Hutchinson - Clinical Methods
8. Shafers - Oral Pathology
9. Sonis. S.T., Fazio.R.C. and Fang. L - Principles and Practice of Oral Medicine
10. Differential diagnosis of oral lesions - Norman wood KW and Paul W. HGoaz 4th edition, 1997, Mosby Philadelphia.
11. Hand book of medical emergencies in dental office by Malamed Stanley 3rd edition 1989, - AITBS, Mosby.
12. Orofacial pains, classification, diagnosis and management by Bell Welden, 4th edition 1989, year book Medical publishers, Chicago.
13. Oral & Marillofacial Injections - Topazian Richard
14. Oral & Marillofacial Pathology - Neville
15. Oral Pathology - Clinical Pathology Carrelation Reglzi

b. Oral Radiology

1. White & Goaz - Oral Radiology - Mosby Year Book
2. Weaheman - Dental radiology - C. V. Mosby Company
3. Stafine - Oral Roentgenographic Diagnosis - W.B. Saunders company
4. Fundamentals of oral medicine and radiology by Bailoor DN and Nagesh KS 1st and 2nd edition 1994, 2001. Contemporary dental publishers
5. Dental Radiography - Principles & Technique - Haring, Howerlow
6. Essentials of Dental Radiography & Radiology - Eevie Whailes

c. Forensic Odontology

1. Derek H. Clark - Practical Forensic Odontology - Butterworth - Heinmann (1992)
2. C. Michel Bowers, Gary Bell - Manual of Forensic Odontology - Forensic Pr.(1995)

IV BDS

PUBLIC HEALTH DENTISTRY

Theory: 45 Hours Practicals : 150 Hours

Sl. No.	Topic	No. of hours	Year of study
1. Public Health:			IV BDS
i. General Epidemiology: - Definition, objectives, methods		2	
ii. Environmental Health: - Concepts, principles, protection, sources, purification environmental sanitation of water disposal of waste sanitation, then role in mass disorders		2	
iii. Health Education: - Definition, concepts, principles, methods, and health education aids		2	
iv. Public Health Administration: - Priority, establishment, manpower, private practice management, hospital management.		2	
v. Ethics and Jurisprudence: Professional liabilities, negligence, malpractice, consents, evidence, contracts, and methods of identification in forensic dentistry.		2	
vi. Behavioral science: Definition of sociology, anthropology and psychology and their in dental practice and community.		2	
vii. Health care delivery system: Center and state, oral health policy, primary health care, national programmes, health organizations.		2	
2. Dental Public Health			
i. Definition and difference between community and clinical health.		2	
ii. Nutrition in oral diseases		2	
iii. Delivery of dental care: Dental auxiliaries, operational and non operational, incremental and comprehensive health care, school dental health Planning & Evaluation		4 1	
iv. Payments of dental care: Methods of payments and dental insurance, government plans.		2	
3. Preventive Dentistry		5	
i. Definition, Levels, role of individual community and professional, fluorides in dentistry, plaque control programmes.			
ii. Prevention of dental caries Prevention of periodontal disease Prevention of oral cancer Prevention of malocclusion Atraumatic Restorative Treatment (ART) Occupational Hazards Evidence Based Dentistry (EBD)		6	

Research Methodology and Dental Statistics	
4. Health Information : - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes	1
5. Research Methodology : - Definition, types of research, designing a written protocol	1
6. Bio-Statistics : - Introduction, collection of data, presentation of data, Measures of Central tendency, measures of dispersion, Tests of significance, Sampling and sampling techniques-types, errors, bias, blind trial and calibration.	5
Practice Management	
1. Place and locality 2. Premises & layout 3. Selection of equipments 4. Maintenance of records/ accounts/audit.	2

PRACTICALS/CLINICALS/FIELD PROGRAMMES IN PUBLIC HEALTH DENTISTRY

These exercises are designed to help the student in IV year:

1. To Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme
3. To gain hands on experience on research methodology.

Exercises: IV BDS

Sl. No.	Topic	Hours of study
1. Oral health education material preparation Preparation of health education materials posters,models,slides Lectures,play acting skits etc.		10 hours
2. Visit to school To asses the oral health status of school children, Emergency treatment and health education including possible preventive Care at school (tooth brushing technique demonstration and oral rinse programme etc.)		20 hours
3. Preventive dentistry and health talk: Including case history, recording of indices,application of pit and fissure Sealants,fluoride gel application procedure,A.R.T. Health talk : Minimum of 12 per year		30 hours
4. Exploring the setting of dental practice Exploring and planning setting of private dental clinics in rural,semi- Urban and urban locations,availment of finances for dental practices, Preparing project report.		10 hours
5. Rural postings Comprehensive care including oral health education in rural areas for Disadvantaged population.		80 hours

Note: Recording of oral health assessment using indices and WHO basic oral health survey methods should be in context of how information collected will be used or utilised. Therefore it is desirable for this exercise to be part of short term research project and not merely for recording.

The Colleges are encouraged to involve in the N.S.S. programme for college students for carrying out Social work in rural areas.

Type of questions and distribution of marks :

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table :

Table

Type of Questions	No. of Questions	Marks per question	Total marks
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
		Grand Total	70

Scheme of Examination
Theory Examination

Sl. No.	Type of Question	No.	Marks	Total (Maximum Marks - 100)
I	Long Essays	2	10	20
II	Short Essays	8	5	40
III	Short Answers	5	2	10

Clinical Examination

Sl. No.	Exercise	Marks allotted (Maximum Marks-100)
1.	Case History Taking	15
2.	Assessment of Oral Health Status using any two relevant indices	35
3.	Preventive Clinical procedures (Any one) (Topical fluoride application, Pit and fissure sealants and ART)	25
4.	Oral Health Education Talk / Presentation of Oral Health Education Material / short term student research project presentation	15

	Theory	Clinicals
Internal Assessment	10	10
University Examination	70	90
Viva voce	20	-
Total	100	100

BOOKS RECOMMENDED & REFERENCE :

1. Dentistry Dental Practice and Community by David F. Striffler and Brain A. Burt, Edn - 1983, W.B. Saunders Company.
2. Principles of Dental Public Health by James Morse Dunning, 4th Edition, 1986, Harward university Press.
3. Jong,s Community Dental Health, 5th Edition, by George Gluck and warren Morganstein.
4. Community Oral Health- A system approach by Patrical P. Cornier and Joyee. I. Levy Published by Application-Century-Crofts / New York, 1881.
5. Community Dentistry - A problem oriented approach by P.C. Dental hand bood series Vol. 8 by Stephen I. Silverman and Ames F. Tryon, series editor-Alvin F. Gardner, PSG Publishing company inc. littleton Massachuseitts, 1980.
6. Clinical Use of Fluorides - Stephen H. Wei.
7. Oral healthsurveys- Basic methods, 4th edition, 1997, published by W.H.O. Geneva Available at the regional office New Delhi.
8. Preventive Dentistry- by J.O. Forrest published by John Wright and sons Britoli, 1980.
9. Preventive Dentistry by Murray, 1997.
10. Textbook of Preventive and Social Medicine by park, 20th edition.
11. Textbook of Preventive and Community dentistry by Dr. S.S. Hirematt.
12. Introduction to Bio-statistics by B.K. Mahajan.
13. Research methodology- Methods and techniques by C.R. Kothari, 2nd edition.
14. Introduction to statistics methods by grewal.
15. Dentistry, Dental Practice and the community, 6th Edition, by Brain A Butt and Stephen a eklund.

IV BDS

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details -IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	IV Year B.D.S
Theory	30 Hours
Clinical	100 Hours
Total	130 Hours

MUST KNOW

IV YEAR - COURSE SYLLABUS:

Sl. No.	Subjects	Hours
1.	General Principles in Orthodontic Treatment Planning of Dental and Skeletal Malocclusions	1 Hour
2.	Anchorage in Orthodontics - Definition, Classification, Types and Stability of Anchorage	2 Hours
3.	Biomechanical Principles in Orthodontic Tooth movement <ul style="list-style-type: none">a. Different types of tooth movementsb. Tissue response to orthodontic force applicationc. Age factor in orthodontic tooth movement	2 Hours
4.	Preventive Orthodontics <ul style="list-style-type: none">a. Definitionb. Different procedures undertaken in preventive orthodontics and their limitations Interceptive Orthodontics <ul style="list-style-type: none">a. Definitionb. Different procedures undertaken in interceptive procedurec. Serial Extraction: Definition, indications, contra-indication, technique, advantages and disadvantagesd. Role of muscle exercise as an interceptive orthodontics	Will Be Covered by Department of Pedodontia
5.	Corrective orthodontics <ul style="list-style-type: none">a. Definition, factors to be considered during treatment planningb. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis	2 Hours

<ul style="list-style-type: none"> c. Methods of gaining space in the arch: - Indications, relative merits and demerits of proximal stripping, arch expansion and extractions d. Extractions in Orthodontics - indications and selection of teeth for extraction 	
<ul style="list-style-type: none"> 6. Orthodontic Appliances: General <ul style="list-style-type: none"> a. Requisites for orthodontic appliances b. Classification, indications of Removable and Functional Appliances c. Methods of force application d. Materials used in construction of various orthodontic appliances - use of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antiluxes e. Preliminary knowledge of acid etching and direct bonding 	2 Hours
<ul style="list-style-type: none"> 7. Removable Orthodontic Appliance <ul style="list-style-type: none"> a. Components of removable appliances b. Different type of clasps and their use c. Different type of labial bows and their use d. Different types of springs and their use e. Expansion appliances in orthodontics <ul style="list-style-type: none"> i. Principles ii. Indication for arch expansion iii. Description of expansion appliances and different types of expansion devices and their uses iv. Rapid maxillary expansion 	2 Hours
<ul style="list-style-type: none"> 8. Fixed Orthodontic Appliances <ul style="list-style-type: none"> a. Definition, Indication and Contraindications b. Component parts and their uses c. Basic principles of different techniques: Edgewise, Begg straight wire 	2 Hours
<ul style="list-style-type: none"> 9. Extraoral Appliances <ul style="list-style-type: none"> a. Headgears b. Chincup c. Reverse pull headgears 	1 Hour
<ul style="list-style-type: none"> 10. Myofunctional Appliances <ul style="list-style-type: none"> a. Definition and principles b. Muscle exercises and their uses in orthodontics c. Functional appliances: <ul style="list-style-type: none"> i. Activator, Oral Screens, Frankels function regulator, bionator twin blocks, lip bumper ii. Inclined planes - upper and lower 	3 Hours
<ul style="list-style-type: none"> 11. Orthodontic Management of Cleft Lip and Palate 	2 Hours
<ul style="list-style-type: none"> 12. Principles of Surgical Orthodontics <ul style="list-style-type: none"> a. Maxillary Prognathism and Retrognathism b. Mandibular Prognathism and Retrognathism 	2 Hours

c. Anterior open bite and deep bite d. Cross bite	
13. Principle, Differential Diagnosis and Methods of Treatment of: a. Midline diastema b. Cross bite c. Open bite d. Deep bite e. Spacing f. Crowding g. Class II - Division 1, Division 2 h. Class III - Malocclusion - True and Pseudo Class III	3 Hours
14. Retention and Relapse Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention	2 Hours
15. Ethics	1 Hour
16. Genetic in Orthodontics	1 Hour
17. Computers in Orthodontics	1 Hour
18. Adult Orthodontics in brief	1 Hour

CLINICALS AND PRATICALS IN ORTHODONTICS DURING IV B.D.S - 130 Hours

CLINICAL TRAINING DURING IV B.D.S

1. Case History Training
2. Case Discussion
3. Discussion on the given topic
4. Cephalometric tracings
 - a. Down's Analysis
 - b. Steiner's Analysis
 - c. Tweed's Analysis

PRATICAL TRAINING DURING IV YEAR B.D.S

1. Adam's Clasp on Anterior teeth Gauge 0.7mm
2. Modified Adam's Clasp on upper arch Gauge 0.7mm
3. High Labial bow with Apron spring on upper arch
(Gauge of Labial bow - 0.9mm, Apron Spring - 0.3mm)
4. Coffin spring on upper arch Gauge 1mm
5. Appliance Construction in Acrylic
 - a. Upper and lower Hawley's Appliance
 - b. Upper Hawley's with Anterior bite plane
 - c. Upper Habit breaking Appliance

- d. Upper Hawley's with Posterior bite plane with 'Z' spring
- e. Lower inclined plane / Catalan's Appliance
- f. Upper Expansion plate with Expansion Screw
- g. Construction of Activator

RECOMMENDED AND REFERENCE BOOKS

1. Contemporary Orthodontics - William R Proffit
2. Orthodontics for Dental Students - White and Gradiner
3. Handbook for Dental Students - Movers
4. Orthodontics - Principles and Practice - Graber
5. Design, Construction and Use of Removable Orthodontic Appliances - C. Philip Adams
6. Clinical Orthodontics: Vol 1 & 2 - Salzmann
7. Orthodontics - Graber and Swine
8. Textbook of Orthodontics-III Edition, M.S. Rani, All India Publishers & Distributors, New Delhi Dr. G.V.N.

SCHEME OF EXAMINATION OF B.D.S (ORTHODONTICS)

Total Theory Marks - 100 Marks

Theory Written Examination -	70 Marks
Vivavoce -	20 Marks
Internal Assessment -	10 Marks
Total	<u>100 Marks</u>

Theory Written Examination- 70 Marks

Type of Questions	Marks	Total
Long Essays - 2	2 x 10	20
Short Essays - 8	8 x 5	40
Short Answers - 5	5 x 2	10
Total		70

Clinical Examination - 100 Marks

University Clinical Examination	90 Marks
Internal Assessment -	10 Marks
Total	<u>100 Marks</u>

University Clinical Examination - 90 Marks

Clinical Work	Marks	Total
Spotters - 10 Nos	10 x 3	30
Wire Bending - 3 Exercises	15 Marks	40
a. Labial Bow -	15 Marks	
b. Adams Clasp	10 Marks	
c. Fingers Spring / Z Spring		
Clinical Case Discussion		20
	Total	90

IV BDS
PEDIATRIC AND PREVENTIVE
DENTISTRY

Lectures
Theory
IV Year: 45 Hours

Practicals/Clinics:
IV Year: 100 Hours

IV YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 45 HOURS

Sl. No.	Subjects	Hours
1.	Child Psychology Definition Importance of understanding child psychology in pedodontics Theories Psychological development from birth through adolescence Dental fear, anxiety and their management, types of cry Application of psychology principles in dental management Psychological disorders including anorexia, bulimia Child Abuse and Neglect	4 hours
2.	Behaviour Management Definition Classification and types of behaviour Factors influencing child behaviour Non-pharmacological management of behaviour Pharmacological management of behaviour: Pharmacological principles in pediatric dentistry-drug dosage formulae Analgesics, anti inflammatory and antibiotics commonly prescribed for children Conscious sedation including nitrous oxide-oxygen inhalation anaesthesia	5 hours
3.	Fluorides Historical background Systemic fluorides-availability, agents, concentrations, advantages and disadvantages Topical fluorides-agents, composition, methods of application both for professional and home use, advantages and disadvantages Mechanism of action and its anti cariogenic effect Fluoride toxicity and its management De fluoridation techniques	4 hours

<p>4. Pediatric Endodontics</p> <p>Principles and diagnosis</p> <p>Classification of pulp pathology</p> <p>Management of pulpally involved primary, young permanent and permanent teeth including materials used and techniques followed</p> <p>Pulp capping</p> <p>Pulpotomy</p> <p>Pulpectomy</p> <p>Apexogenesis</p> <p>Apexification</p>	4 hours
<p>5. Traumatic injuries to teeth</p> <p>Definition</p> <p>Classification</p> <p>Etiology and incidence</p> <p>Management of trauma to primary teeth</p> <p>Sequelae and reaction following trauma to primary teeth</p> <p>Management of trauma to young permanent teeth</p> <p>Prevention of trauma: mouth protectors</p>	5 hours
<p>6. Preventive and Interceptive Orthodontics</p> <p>Definitions</p> <p>Problems seen during primary and mixed dentition periods and their management</p> <p>Mixed dentition analysis</p> <p>Serial extraction</p> <p>Space management</p>	4 hours
<p>7. Oral Habits in children</p> <p>Definition, classification and aetiology of all habits</p> <p>Clinical features of deleterious oral habits including non-nutritive sucking, mouth breathing, non functional grinding, masochistic and occupational habits</p> <p>Management of oral habits in children</p>	4 hours
<p>8. Dental management of children with special needs</p> <p>Definition, classification, aetiology, clinical features, special considerations in the dental management of:</p> <p>Physically handicapping conditions</p> <p>Mentally handicapping conditions</p> <p>Medically compromising conditions</p> <p>Genetic disorders and importance of genetic counselling</p>	5 hours
<p>9. Oral surgical procedures in children</p> <p>Indications and contra indications for extraction</p> <p>Minor surgical procedures in children</p> <p>Knowledge of local and general anaesthesia</p>	2 hours
<p>10. Preventive dentistry</p> <p>Definition, principles and scope</p>	3 hours

Levels and types of prevention Preventive measures: Minimal Intervention Pit and fissure sealants Preventive resin restorations (PRR, CARR) Newer agents available for caries prevention and re mineralization Caries vaccine	
11. Nanodentistry- introduction, principles and technique -an outline	1 hour
12. Dental health education and school dental health programmes	1 hour
13. Importance of Dental Home	1 hour
14. Dental emergencies in children and their management	1 hour
15. Setting up of Paediatric dental practice including ethics	1 hour

PRACTICALS / CLINICS

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of orofacial region. Training is also imparted in management whenever possible.
2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination.
3. The following is the minimum prescribed work:

Pre-clinical (III Year)

Drawing of individual primary teeth morphology
Preparation of various cavity designs on typhodont teeth and extracted primary and permanent teeth
Fabrication of habit breaking appliances
Clinical exercises (IV Year)
Case History Recording and Treatment Planning
Communication and Management of child patient
Preventive measures - oral prophylaxis, topical fluoride application
Restoration of carious teeth using different materials
Extraction of primary teeth

SCHEME OF EXAMINATION

- A. Theory (University written examination) 70 Marks
Distribution of Types of Questions

Type of Questions and Marks	Marks
Long Essay - 2 x 10 Marks	20
Short Essays - 8 x 5 Marks	40
Short Answers - 2 x 5 Marks	10
Total	70

B. Internal Assessment Theory: 10 Marks, Practicals: 10 Marks

C. Clinical: 90 Marks

1. Clinical in Pedodontics and Preventive Dentistry: 60 Marks
 - a. Case History, Clinical Examination, Diagnosis and Treatment Planning: 30 Marks
 - b. Clinical procedure: 40 Marks
 - i. Oral prophylaxis and topical fluoride application
 - ii. Restoration of decayed tooth
 - iii. Extraction of primary tooth
 - c. Overall management of child patient and post-operative instructions: 20 Marks

D. Viva Voce: 20 Marks

Theory - 100

University written exam:	70
Viva Voce:	20
Internal assessment (written):	10
Total	<u>100</u>

Clinical - 100

University exam:	90
Internal assessment (written):	10
Total:	<u>100</u>

BOOKS RECOMMENDED

1. Dentistry for the Child and Adolescent- Mc Donald
2. Pediatric Dentistry (Infancy Through Adolescence)- Pinkham
3. Clinical Pedodontics- Sidney B.Finn
4. Paediatric Operative Dentistry-Kennedy
5. Behaviour Management- Wright
6. Clinical Use of Fluorides- Stephen H. Wei
7. Textbook of Pediatric Dentistry-Braham Morris
8. Primary Preventive Dentistry-Norman O Harris, Franklin Garcia-Godoy
9. Understanding of Dental Caries-Nikiforuk
10. Textbook and Color Atlas of Traumatic Injuries to the Teeth - J.O Andreason, C.M Andreason
11. Textbook of Pedodontics- Shobha Tandon
12. Handbook of Clinical Pedodontics- Kenneth D

IV BDS

PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

Teaching Hours:

Clinical:

III year : 70 hours
IV year : 300 hours

Theory:

III year : 30 hours
IV year : 80 hours

IV PROSTHODONTICS THEORY: 30 HOURS

Sl. No.	Subjects	Hours
1. Relating the patient to the articulator	Articulators <ul style="list-style-type: none"> - articulators based on theories of occlusion - articulators based on the type of record used for their adjustment Selection of Articulator for complete dentures <ul style="list-style-type: none"> - Hanau articulator - Whip mix articulator - Dentatus articulator 	1 hour
2. Selecting artificial teeth for edentulous patient	Anterior tooth selection Pre extraction guides size of the anterior teeth form of the anterior teeth The dentogenic concept in selecting artificial teeth Posterior tooth selection Bucco lingual width of posterior teeth mesiodistal length of posterior teeth cervico Occlusal Length of Posterior Teeth types of posterior teeth according to materials types of posterior teeth according to cusp inclines	1 hour
3. Preliminary Arrangement Of Artificial Teeth	Guides for preliminarily arranging anterior teeth Relationship to incisive papilla factors governing the anteroposterior position of the dental arch	1 hour

<p>Setting Maxillary anterior teeth in wax for try in</p> <p>Importance of proper Anteroposterior positioning of the anterior teeth</p> <p>Setting mandibular anterior teeth in the wax for try in</p> <p>Horizontal overlap</p> <p>Preliminary arrangement of Posterior teeth</p> <p>Orientation of occlusal plane</p> <p>tentative buccolingual position of the posterior teeth</p> <p>tentative arch form of the posterior teeth</p> <p>Setting posterior teeth for try in</p> <p>guidelines for centric occlusion</p> <p>esthetics and leverage</p>	
<p>4. Perfection and verification of jaw relation records</p> <p>Verifying Vertical Dimension</p> <p>Verifying the centric relation</p> <p>Intraoral observation of intercuspation .</p> <p>Intraoral interocclusal records</p> <p>Extra oral articulator method</p> <p>Creating Facial And Functional Harmony With Anterior Teeth</p> <p>Anatomy of natural appearance and facial expression</p> <p>normal facial landmarks</p> <p>maintaining facial support and neuromuscular balance</p> <p>Basic guides to developing facial and functional harmony</p> <p>preliminary selection of the artificial teeth</p> <p>horizontal orientation of the anterior teeth</p> <p>vertical orientation of the anterior teeth</p> <p>phonetics in the orientation of the anterior teeth</p> <p>inclination of the anterior teeth</p> <p>harmony in the general composition of anterior teeth</p> <p>refinement of individual tooth positions</p> <p>concept of harmony with sex personality and age of the patient</p> <p>correlating esthetics and incisal guidance</p> <p>Patient acceptance of arrangement of anterior teeth</p>	1 hour
<p>5. Completion of the try in : Eccentric Jaw relation adjustment, establishing the posterior palatal seal</p> <p>Protrusive and lateral relations</p> <p>Controlling factors of movement</p> <p>Eccentric relation records</p> <p>Establishing the posterior palatal seal</p> <p>Arranging posterior teeth for functional harmony</p> <p>Importance of occlusion</p> <p>Maintenance of the arches</p> <p>Maintenance of occlusal harmony</p> <p>differences in artificial occlusion and natural occlusion</p> <p>rational for arranging posterior teeth in Temporomandibular joint disturbances</p> <p>Factors of Centric occlusion</p> <p>Critical components in arranging posterior teeth</p> <p>Laws protrusive occlusion</p>	2 hours

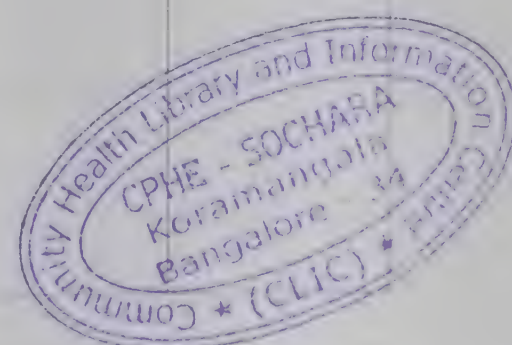
<p>Laws of lateral occlusion</p> <p>Occlusal schemes used in complete dentures for the edentulous patients</p> <ul style="list-style-type: none"> - Anatomic teeth - Non anatomic teeth - Other tooth forms <p>Techniques for arranging cusped teeth in Balanced occlusion</p> <p>techniques for arranging cuspless teeth in occlusion.</p> <p>Appearance and Functional Harmony of Denture Bases</p> <p>materials used for denture bases</p> <ul style="list-style-type: none"> - Acrylic Resin - Metal <p>formation and preparation of the mold packing the mold</p> <p>preserving the orientation relations</p> <p>construction of remounting casts</p> <p>completing the rehabilitation of the patient</p> <p>dentists evaluations</p> <p>patients evaluations</p> <p>friends evaluations</p> <p>elimination of basal surface errors</p> <p>errors in occlusion</p> <p>interocclusal records for remounting dentures</p> <p>interocclusal record of centric relation</p> <p>remounting the mandibular denture</p> <p>verifying centric relation</p> <p>Phonetics - Production of voice and Articulation of sounds</p> <p>Position of teeth and phonetics</p> <p>Neutral, Zone, Relief</p> <p>Processing errors - Reasons and care</p> <p>Selective grinding</p> <p>Remount and correction of occlusal discrepancies</p> <p>Prosthesis - Insertion</p>	
<p>6. Patient instructions , after care and recall and management of patient complaints</p> <p>protrusive inter occlusal record</p> <p>alternative use of plaster inter occlusal records</p> <p>advantages of balanced occlusion in complete dentures</p> <p>special instructions to the patient</p> <ul style="list-style-type: none"> - individuality of patients - appearance with new dentures - mastication with new dentures - speaking with new dentures - oral hygiene with dentures <p>Maintaining the comfort and health of the oral cavity in a rehabilitated edentulous patient</p> <p>Post Insertion Adjustments</p> <ul style="list-style-type: none"> - adjustments relaxed to the occlusion - adjustments relaxed to the Denture bases - subsequent oral examinations and treatments 	<p>1 hour</p>

<p>7. Rehabilitation of the partially edentulous patients (overdentures)</p> <p>tooth-supported complete dentures</p> <ul style="list-style-type: none"> - indications and contraindications for over dentures - selection of abutment teeth - clinical procedures 	1 hour
<p>8. Immediate Denture Treatment</p> <ul style="list-style-type: none"> - indication for immediate dentures - contraindications to immediate denture service - delayed and transitional dentures - treatment planning - clinical procedures - waxing and flasking - preparation of the surgical template - processing occlusal correcting, and final preparation of the immediate dentures - surgery and the insertion of the dentures - postoperative patient instructions - perfecting the occlusion - subsequent service for immediate dentures <p>Single complete dentures opposing natural teeth</p> <ul style="list-style-type: none"> - maxillary single dentures - clinical and laboratory procedures - subsequent problems with single dentures against natural teeth - mandibular single dentures - supplemental prosthodontic procedures for the edentulous patient 	2 hours
<p>9. Relining or Rebasing of Complete Dentures</p> <ul style="list-style-type: none"> - treatment rationale - diagnosis - clinical procedures <p>Static impression technique closed and open mouth relines/rebases</p> <ul style="list-style-type: none"> - functional impression technique - chair side technique <p>Repair of Complete Dentures And Duplication Of Casts</p> <ul style="list-style-type: none"> - Maxillary and mandibular fracture repair - repairs using cold-curing resin - duplication of casts - reversible hydrocolloid technique - irreversible hydrocolloid technique 	2 hours
<p>10. Osteo Integrated Supported Prosthesis (Dental Implants)</p> <p>For The Edentulous Patient</p> <ul style="list-style-type: none"> - maladaptive denture behavior - use of dental implants - patient considerations - tissue integration in the edentulous patient <p>Management of japer-plastic ridges</p> <ul style="list-style-type: none"> - Atrophied flat mandibular ridges in complete denture prosthesis therapy 	1 hour

Geriatric Dentistry: Management of aged, senior citizens, physically, mentally handicapped patients	
REMOVABLE PARTIAL DENTURE PROSTHESIS	
11. 1. Introduction and scope 2. Terminology 3. Classifications 4. Examination, diagnosis and treatment planning 5. Components of removable partial dentures and their functions	3 hours
12. Major connectors Mandibular Major connectors Maxillary Major connectors	2 hours
13. Minor connectors Functions Form and location Tissue stops Finishing lines. reaction of tissues to metallic coverage form of occlusal rests and rest seats	1 hour
14. Rests and rest seats Interproximal occlusal rest seats Internal occlusal rests Incisal rests and rest seats Lingual rests on canines and incisor teeth Possible movements of partial denture Support for rests	1 hour
15. Direct retainers Internal attachments Extra coronal direct retainers Relative uniformity of retention Criteria for selecting a given clasp design Basic principles of clasp design Designs of clasps	3 hours
16. Indirect retainers Denture rotation about an axis Factors influencing effectiveness of indirect retainers Auxiliary functions of indirect retainers Forms of indirect retainers Auxiliary occlusal rests Canine extensions from occlusal rests Canine rests Continuous bar retainers and lingual plates	2 hours

<p>Modification areas</p> <p>Rugae support</p> <p>Direct indirect retention</p> <p>Denture base considerations</p> <p>Tooth supported partial denture base</p>	
<p>17. Distal extension partial denture base:</p> <p>Functions of denture bases</p> <p>Methods of attaching denture bases</p> <p>Ideal denture base material</p> <p>Advantages of metal bases</p> <p>Methods of attaching artificial teeth</p> <p>Need for relining</p>	1 hour
<p>18. Impression materials and procedures for removable partial dentures</p> <p>Rigid materials</p> <p>Thermoplastic materials</p> <p>Elastic materials</p> <p>Impressions of the partially edentulous arch</p> <p>individual impression trays</p> <p>Support for distal extension removable partial dentures</p> <p>- Factors influencing the support of distal extension bases</p> <p>Method for obtaining functional support for distal extension base</p>	1 hour
<p>19. Surveying</p> <p>Description of a dental surveyor</p> <p>Purposes of a surveyor</p> <p>Factors that determine path of placement and removal</p> <p>Step by step procedures in surveying a diagnostic cast</p> <p>Final path of placement</p> <p>Recording relation of cast to surveyor</p> <p>Surveying the master cast</p> <p>Measuring retention and balancing of retention</p> <p>Influence of survey line in designing of clasps</p> <p>Blocking out the master cast</p> <p>Relieving the master cast</p> <p>Paralleled block out. shaped block out, arbitrary block out and relief</p> <p>Preparation of the mouth for removable partial denture</p> <p>Oral surgical preparation</p> <p>Conditioning of abused and irritated tissues</p> <p>Periodontal preparation</p> <p>Periodontal diagnosis and treatment planning</p> <p>Initial disease control therapy</p> <p>Definitive periodontal therapy</p> <p>Recall and maintenance</p> <p>Advantages of periodontal therapy</p> <p>Preparation of abutment teeth</p> <p>Classification of abutment teeth</p> <p>Sequence of abutment preparation on sound enamel</p>	3 hours

<p>Abutment preparation using conservative restorations</p> <p>Abutment preparation using crowns</p> <p>Splinting of abutment teeth</p> <p>Use of isolated teeth as abutment</p> <p>Missing anterior teeth</p> <p>Temporary crowns when a partial denture is being worn</p> <p>Fabricating restorations to fit existing denture retainers</p>	
<p>20 Occlusal relationship for removable partial denture</p> <p>Difference in natural and artificial occlusion</p> <p>Desirable occlusal contact relationship for removable partial denture</p> <p>Method for establishing occlusal relationship</p> <p>Materials for artificial posterior teeth</p> <p>Establishing jaw relation for mandibular removable partial denture opposing a Maxillary complete denture</p> <p>Labatory procedures</p> <p>Duplicating a stone cast</p> <p>Waxing the partial denture framework</p> <p>Anatomic replica pattern</p> <p>Spruing, investing, burnout, casting and finishing of the partial denture framework</p> <p>Making record base</p> <p>Occlusal rims</p> <p>Making a stone occlusal template from a functional occlusal record</p> <p>Arranging posterior teeth to an opposing cast</p> <p>Types of anterior teeth</p> <p>Waxing & investing the partial denture before processing the acrylic resin base</p> <p>Processing the denture</p> <p>Remounting and occlusal corrections to an occlusal template</p> <p>Polishing the denture</p> <p>Work authorization for removable partial denture</p> <p>Work authorization</p> <p>Definitive instructions by work authorization</p> <p>Legal aspects of work authorization</p> <p>Relining and rebasing the removable partial denture</p> <p>Relining tooth support - supported denture base</p> <p>Relining distal extension denture base</p> <p>Method of reestablishing occlusion of a relined partial denture</p>	3 hours
<p>18. Stress breakers</p> <p>Types of stress breakers</p> <p>Advantages of stress breakers</p> <p>Disadvantages of stress breakers</p> <p>Advantages of a rigid design</p> <p>Disadvantages of a rigid design</p> <p>Stress breaking principles</p> <p>Principles of removable partial denture design</p> <p>Biomechanical considerations</p> <p>Other factors influencing</p> <p>Differentiation between two main types of removable partial dentures</p> <p>Essentials of partial denture design</p>	1 hour



Components of partial denture design Additional considerations influencing design	
22. Repair and additions to removable partial denture Broken clasp arms Fractured occlusal rests Distortion or breakage of other components Loss of teeth not involved in the support or retention of the restoration Loss of an abutment tooth necessitating its replacement and making a new direct retainer Other types of repair Repair by soldering	2 hours
23. Temporary removable partial denture Appearance Space maintenance Reestablishing occlusal relationships Conditioning teeth and residual ridge Conditioning the patient for wearing a prosthesis	2 hours
24. Removable partial denture considerations In maxillofacial prosthodontics - 1 Maxillofacial Prosthodontics Intraoral prosthesis design considerations Maxillary prosthesis Mandibular prosthesis Treatment planning Framework design Class I resections Class II resections Mandibular flange prosthesis	1 hour
ELEMENTS OF FIXED PROSTHODONTICS (CROWN AND BRIDGE PROSTHESIS)	
25. Introduction and definitions. Terminologies Indication and Contraindications	2 hours
26. Examination, diagnosis and treatment planning and radiological interpretations.	1 hour
27. Selection and choice of abutment teeth	1 hour
28. Biomechanical principles of tooth preparation Preservation of tooth structure Retention and resistance form Structural durability of the restoration Marginal integrity Preservation of the periodontium Finish lines and the periodontium Occlusal bevels	3 hours

<p>Occlusal bevels Flares Gingival finish lines Preservation of the periodontium Instrumentation Water air cooling Armamentarium</p>	
<p>29. Full veneer crowns Maxillary and mandibular posterior three quarter crowns Anterior three quarter crown Pin modified three quarter crowns Seven eighths crown Proximal half crowns Inlay MOD onlay</p>	3 hours
<p>30. Anterior/ posterior porcelain fused to metal crowns All ceramic crowns Preparation modifications for damaged teeth Modifications for damaged vital teeth Conversion of defects into retentive features Solution to common problems</p>	3 hours
<p>31. Endodontically treated tooth Preparation modifications for special situations Preparation for fixed bridge abutment Preparation for removable partial denture abutments</p>	3 hours
<p>32. Isolation of working field and temporary protections of prepared tooth Gingival retractions and impression procedures. Construction of DIES of working models, direct and indirect technique. Techniques of fabrication of retainers and materials used, its application with reference to esthetics.</p>	3 hours
<p>33. Selection and fabrication of pontics and esthetics. Connectors, stress- breakers and assembly of fixed bridges.</p>	3 hours
<p>Finishing, cementing and maintenance of crowns and bridges Laser and high speed.</p>	

IMPLANTS	
<p>34. Osseo Integrated - Supported prosthesis. Introduction and scope advantages and disadvantages. Classification Applied material science, patient Evaluation pre-surgical preparation treatment plan, applied Linical, surgical and Laboratory Procedure. Osseointegrated supporting prosthesis occlusion, esthetics, insertion and maintenance. Examination, diagnosis and treatment planning and other clinical and Laboratory procedures</p>	5 hours
<p>35. Maxillofacial Prosthesis Restoration of congenital and acquired oral and para-oral Defects. (Facial Prostheses, including implant support Maxillo Facial prosthesis). Splints Obturator Carriers Bruxism and management of occlusal attrition</p>	5 hours
<p>36. Miscellaneous Patient and practice management in Prosthodontic clinic Ethics, Law. Jurisprudence an Forensic Odontology - in Prosthodontic practice Assistants - Laboratories and clinic Communication methods - Technician work Authorization, methods and legally</p>	5 hours
<p>37. Emergencies in Prosthodontics During impression recording in Partially, Completely Edentulous Situation and Maxillofacial Defects. Precautions and management of traumatic accidents in tooth preparation use vasoconstrictor in anaesthetic solutions and retraction cords. ill fitting dentures Broken clasps, facings Broken Prosthesis Swallowing Prothesis General Management of elderly and C.V.S. and immuno compromised patients.</p>	2 hours

CLINICAL ASSIGNMENTS

III & IV BDS

1. Treatment for completely edentulous patients - 3 Patients
2. Treatment for Partially Edentulous Patients
- Provisional R. P - 5 D
(Minimum one for each Kennedy's classification)
3. F.P - preparation of crown - anterior and posterior, one each. D.
4. Relining & Rebasing, Repair - 1 each.
5. Immediate denture - 1
6. Single denture - 1

Demonstrations of Clinical and Laboratory procedures for :

3-Unit Fixed Partial Denture, Maxillofacial prosthesis, Obturators and implant supported prosthesis.

SCHEME OF EXAMINATION

- a. **THEORY** (University written examination) 70 marks

Distribution of topics and types of questions.

Contents	Type of Questions and Marks	Marks
One long essay from complete denture One long essay from removable partial denture / fixed partial denture	Long Essays 2 x 10 marks	20
3 short essays from complete denture 3 short essays from removable partial denture 2 short essays from fixed partial denture	Short Essays 8 x 5 marks	40
2 short answers from complete denture 1 short answer from removable partial denture 2 short answers from fixed partial denture	Short Answers 2 x 5	10
Total		70

B. Internal Assessment Theory: 10 marks, Practicals:10 marks**C. CLINICALS : 90 Marks**

i. Case History	10 Marks
ii. Complete denture exercise	50 Marks
iii. RPD Designing or Tooth Preparation on Typhodont	10 Marks

D. Viva voce 20 Marks

Theory: 100 Marks

University written exam : 70 Marks

Viva - voce 20 Marks

Internal assessment (written) 10 Marks

Total 100 Marks

Clinical 100 Marks

University Exam 90 Marks

Internal assessment (written) 10 Marks

Total 100 Marks

Text Books and Reference Books

Sl. No.	Author	Name of the Book & Title	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
01.	Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St. Louis, Missouri, USA
02.	Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House Hind Rajasthan Building Bombay, India
03.	Rosenstiel	Contemporary Fixed Prosthodontics	III	2001	Mosby, St. Louis, Missouri, USA
04.	Sharry	Complete Denture Prosthetics	---	---	---
05.	Shillingburg	Fundamentals of Tooth Preparation	I	1987	Quintessence Publications 551 North Kimberly Drive, Carol Stream, IL-60188-1881
06.	Tylman	Theory and practice of Fixed Prosthodontics	VIII	1993	Ishiyaku EuroAmerica, Inc., 716, Hanley Industrial Court, St. Louis Missouri, USA.

Sl. No.	Author	Name of the Book & Title	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
07.	Jhonston	Modern practice in Fixed Prosthodontics	--	--	--
08.	Mc Giveney Glen P	MC Cracken's removable Partial Prosthodontics	9th	1995	Mosby
09.	Shillinburg	Fundamentals of Fixed Prothodontics	III	1997	Quintessence Publications 551 North Kimberly Drive, Carol Street, IL
10.	Stewart	MC Cracken's removable Partial Prosthodontics	II	1997	All India Publishers & Distributors
11.	Skinner	Science of Dental Materials	X	1996	W.B. Saunders Company, Philadelphia, USA
12.	Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA
13.	Combe	Notes on Dental Materials	VI	1992	Churchill Living stone, NY, USA
14.	Carl Misch	Contemporary Implant Dentistry	---	---	---
15.	Branemark	Tissue Integrated Prosthesis	---	1986	---
16.	Bernard G.N. Smith	Dental Crowns and Bridges Design and preparation	---	---	---
17.	A.A. Grant / W. Johnson	Removable Denture Prosthodontics	2nd	---	---
18.	Dr. Sybille K. Leehner, Prof. A Roy. Mc Gregor	Removable Partial Prosthodontics	2nd	---	---
19.	Grant Heath Mc Cord	Complete Denture	---	---	Wolfe Publishing Europe
20.	George F. Kantorowicz	A Clinical Handbook Inlays, Crown and Bridges	---	---	Indian Edition by Varghese Company
21.	Bengt 'O' wall Arud F. Kayser	Prosthodontics	---	---	Mosby - Wolfe
22.	Gunnar E. Carlsson	Principles and Management Strategies		---	Mosby - Wolfe

IV YEAR - BDS
CONSERVATIVE TOPICS - 80 hours

1. Casts restorations Indications, contraindications advantages and disadvantages Materials used Class II cavity preparation for inlays Types of bevels in cast restoration Differences in tooth preparation for amalgam and cast restorations Fabrication of wax patterns	3 hours
2. Casting Die materials and preparation of dies Refractory materials Alloys used for casting Casting machines Casting procedure and defects Cementation of restoration	2 hours
3. Temporisation or interim restoration Materials and procedure	1 hour
4. Esthetics in dentistry Introduction and scope Anatomy and physiology of smile Role of colour and translucency Esthetic recontouring Alteration of tooth form, shape, size and colour Management of discoloured teeth	4 hours
5. Composite restorations Recent advances in posterior composite resins. Indications, contraindications, advantages and disadvantages Clinical technique for posterior direct composite restorations Finishing and polishing of composite restoration Indirect posterior composite restoration	3 hours
6. Non carious destruction of tooth structure - Definition, ethiology, diagnosis, clinical features and management	2 hours
7. Ceramic Restorations Recent advances in ceramic materials & techniques including CAD/CAM (in brief) Ceramic laminates, inlays, onlays and crowns, Indications, contraindications, advantages, disadvantages and techniques (in brief)	3 hours
8. Direct Filling gold Restorations : Introduction Types of direct filling gold. indications contraindications advantages disadvantages tooth preparation and restoration	1 hour

ENDODONTIC TOPICS - 28 hours

1. Emergency endodontic procedures	2 hours
2. Internal anatomy of pulp space Root canal anatomy of maxillary and mandibular teeth. Classification of canal configuration and variations in pulp space	2 hours
3. Access cavity preparation Objectives Principles Instruments used Sequential steps of access cavity preparation for individual tooth	2 hours
4. Preparation of root canal space a. Determination of working length definition and methods of determining working length b. Cleaning and shaping of root canals objectives principles instruments used techniques-hand and rotary	2 hours
5. Disinfection of root canal space a. irrigation Introduction Function of irrigants Methods and techniques of irrigation b. intracanal medicaments functions requirements types methods of placement and limitations	2 hours
6. Problems during cleaning and shaping of root canal space. Perforation and its management Broken instruments and its management, management of curved root canals.	2 hours
7. Obturation of the root canal system. a. Materials- Ideal root canal filling material, classification of materials b. Obturation techniques Classification and procedure	2 hours
8. Root canal Sealers. Ideal properties classification., functions Manipulation and application of root canal sealers	2 hours

9. Post endodontic restoration Principles of post endodontic Restorations Post and core-materials and procedure (in brief)	2 hours
10. Smear layer and its importance in endodontics and conservative treatment	1 hour
11. Traumatized teeth Classification of fractured teeth. Management of fractured tooth.	2 hours
12. Endodontic surgeries indication contraindications, pre operative preparation. surgical instruments and techniques apicectomy, retrograde filling, post operative sequelae, trephination, hemisection, radisectomy reimplantation (both intentional and accidental)	3 hours
13. Root resorption Etiology and management	1 hour
14. Use of specialized equipments like Lasers and microscopes in conservative dentistry and endodontics	1 hour

CLINICAL EXERCISES

1. Case history recording, diagnosis and treatment planning
2. Clinical examination and use of various diagnostic aids
3. Pit and fissure sealants - 10
4. Pulp Capping - 10
5. Glass ionomer restorations - 10
6. Composite restorations in anterior teeth - 10
7. Composite restorations in posterior teeth - 10
8. CLASS I Amalgam restorations - 10
9. CLASS II Amalgam restoration - 10
10. Root canal treatment for Anterior teeth - 2

Demonstration :

1. Cast inlay restoration
2. Post core restoration
3. Molar endodontic treatment
4. Peri apical surgery
5. Esthetic restorative procedures
 - * Bleaching of teeth
 - * Veneers
 - * Diastema closures etc.
6. Tooth coloured inlays, onlays, crowns.

Scheme of Examination

A. THEORY (University written examination) 70 marks

Distribution of topics and types of questions.

Contents	Type of Questions and Marks	Marks
One long essay from conservative topics One long essay from endodontics topics	Long Essays 10 x 2 marks	20
Five questions from conservative topics including aesthetic dentistry Three questions from endodontics topics	Short Essays 8 x 5 marks	40
Three questions from conservative topics including esthetic dentistry Two questions from endodontics topics	Short Answers 5 x 2	10
	Total	70

B. VIVA VOICE - 20 MARKS

C. INTERNAL ASSESMENT - THEORY : 10 MARKS, PRACTICALS : 10 MARKS

D. PRACTICAL EXERCISE : 90 MARKS

1. Preparation of class 2 cavity for amalgam and retoration
Or
2. Anterior composite restoration
Or
3. Root canal treatment for anterior tooth up to selection of master cone

Details of marks distribution of the practical examination

1. Class II amalgam restoration
 - a. Case history recording, examination, diagnosis and treatment planning - 15 marks
 - b. Cavity preparation - 30 marks
 - c. Lining and matrix - 15 marks
 - d. Restoration and finishing - 30 marks**Total - 90 marks**
2. Anterior composite restoration
 - a. Case history recording, examination, diagnosis and treatment planning - 15 marks
 - b. Tooth preparation, shade selection and isolation - 35 marks
 - c. Restoration and finishing - 40 marks**Total - 90 marks**
3. Anterior RCT
 - a. Case history recording, examination, diagnosis and treatment planning - 20 marks
 - b. Access cavity preparation - 25 marks
 - c. Working length - 20 marks
 - d. Chemomechanical preparation and master cone selection - 25 marks**Total - 90 marks**

IV BDS

ORAL AND MAXILLOFACIAL SURGERY

IV year BDS Theory: 50 hours

1.	Dento-alveolar surgery	Trans alveolar extraction Impacted teeth: General factors, incidence, etiology Classification and indications Assesment: clinical & radiological Anaesthetic considerations Surgical procedure Impacted maxillary third molar & Impacted canines	1 hour 4 hours
2.	Endodontic surgery	Introduction, classification, apicectomy, replantation	1 hour
3.	Infections of the oral cavity	Introduction, microbiology, anatomy of fascial spaces, course of odontogenic infections, Spread of infection, classification, clinical features, management Dentoalveolar abscess, ludwigs angina osteomyelitis and ORN. Hepatitis B and HIV	4 hours
4.	Cystic lesions of jaws	Definition, classification and pathogenesis Diagnosis, clinical features, radiological, aspiration biopsy, use of contrastmedia and histopathology Management-types of surgical procedures, and complications.	3 hours
5.	Oral Implantology	Principles of implantology	2 hours
6.	Ethics		1 hour
7.	Preprosthetic surgery	Introduction- aims, classification Corrective Procedures - hard & soft tissues Ridge extension and augmentation procedures	2 hours
8.	Diseases of maxillary Sinus	Surgical anatomy, Acute & chronic sinusitis	1 hour
		Oral antral fistula & Surgical approach for sinus	1 hour

9.	TMJ disorders	Surgical anatomy	1 hour
		Subluxation & Dislocation	1 hour
		Ankylosis	1 hour
		Myofunctional pain/dysfunction syndrome	1 hour
		Internal derangement & Arthritis and other disorders	1 hour
10.	Tumors of the oral Cavity	General considerations, Carcinoma of oral cavity, TNM classification	1 hour
		Non odontogenic benign tumors - lipoma, fibroma, papiloma, ossifying fibroma, myom etc	1 hour
		Ameloblastoma	1 hour
		Biopsy - types	1 hour
		Outline of management of squamous cell carcinoma, surgery, radiotherapy, chemotherapy.	1 hour
11.	Fractures of the jaws	General consideration, types of the fractures, etiology, C/F, and general principles, Dento-aveolar methods of management	1 hour
		Mandibular Fractures- Applied Anatomy, Classification Diagnosis - Clinical and Radiological Features	1 hour
		Management of condyle - aetiology, classification, clinical features and general principles of management, reduction & fixation	1 hour
		Fractures of middle third of the face, Definition of midface, applied surgical anatomy, classification, clinical features and outline of management	2 hours
		Orbital fractures & of Zygomatic complex	1 hour
		Classification, C/F, indications for treatment, various methods of reduction and fixation.	2 hours
		Complications - delayed union, non-union and malunion.	1 hour
12.	Developmental deformities	Basic forms, prognathism, retrognathism and open bite. Reasons for correction. Outline of surgical methods carried out on maxilla and mandible	4 hours

13.	Salivary gland diseases	Salivary calculi and Infections of the salivary glands its management	1 hour
		Tumours of the salivary gland and management	1 hour
14.	Neurological disorders	Trigeminal neuralgia - definition, etiology, C/F and methods of management including surgery, Glossopharyngeal and Facial paralysis - etiology, clinical features	1 hour
		Nerve injuries - classification, neurorhaphy etc.	1 hour
15.	Cleft lip and cleft palate	Etiology, of the clefts, incidence, classifications role of dental surgeon in the management of cleft patients. Outline of the closure procedures.	4 hour

Practical and Clinicals : 200 hours

Students are required to learn the following exercises:

Case history taking

Examination of the patient

Recording blood pressure

Use of different instruments in Oral & Maxillofacial surgery

Various local anaesthetic injection techniques on patients

Extraction of mobile and firm teeth

Trans-alveolar extraction of root stumps

Surgical removal of Simple impacted teeth

Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations.

Training in basic life support skills.

Practical and Clinicals Quota

Year	Clinical exercises	Quota	Category
IV year BDS			
	Extraction of mobile and firm teeth	60 cases	must do
	Trans-alveolar method of extraction with suturing	10 cases	must do
	Surgical removal of Simple impactions	5 cases	Desirable to do
	Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations	5 cases	Desirable to do
	IM & IV Injection techniques	5 cases	Desirable to do
	Assisting major surgical procedures under general anaesthesia	5 cases	Desirable to do
	Training in Handling medical emergencies, CPR and basic life support		must do

Scheme of Examination

A. THEORY (University written examination) 70 marks

Distribution of topics and types of questions.

Contents	Type of Questions and Marks	Marks
a. One Question from Local Anaesthesia b. One Question from Oral Surgery	Long Essays 2 x 10 marks	20
a. Five Questions from Oral Surgery b. One Question from General Anaesthesia	Short Essays 6 x 5 marks	30
a. Nine Questions from Oral Surgery b. One Question from Local anaesthesia	Short Answers 10 x 2 marks	20
	Total	70

B. INTERNAL ASSESMENT - THEORY : 10 MARKS, PRACTICALS : 10 MARKS

C. CLINICALS : 90 MARKS

1. Clinicals in Oral Surgery :
90 Marks (Extraction of firm tooth)

A. Case History	30 Marks
B. Local anaesthesia technique	30 Marks
C. Extraction of firm tooth (Maxillary / Mandibular tooth and management of the patient)	30 Marks

D. Viva voce 20 Marks

Theory:	100 Marks
University written exam :	70 Marks
Viva - voce	20 Marks
Internal assessment (written)	10 Marks
Total	100 Marks

Clinicals	100 Marks
University Exam	90 Marks
Internal assessment (written)	10 Marks
Total	100 Marks

SECTION V

SECTION

ETHICS IN DENTISTRY

Introduction

There is a definite shift now from the traditional patient and doctor relationship and delivery of dental care. With the advances in science and technology and the increasing needs of the patient, their families and community, there is a concern for the health of the community as a whole. There is a shift to greater accountability to the society. Dental specialists like the other health professionals are confronted with many ethical problems. It is therefore absolutely necessary for each and every one in the health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values, it is desired that all the trainees undergo ethical sensitization by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

Course content :

Introduction to Ethics

- What is ethics?
- What are values and norms?
- How to form a value system in one's personal and professional life?
- Hippocratic oath.
- Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, D.C.I. Code of ethics.

Ethics of the Individual

The patient as a person
Right to be respected
Truth and confidentiality
Autonomy of decision
Doctor Patient relationship

Professional Ethics

Code of conduct
Contract and confidentiality
Charging of fees, fee splitting
Prescription of drugs
Over-investigating the patient
Malpractice and negligence

Research Ethics :

Animal and experimental research/humanness
Human experimentation
Human volunteer research-informed consent
Drug trials

Ethical workshop of cases
Gathering all scientific factors
Gathering all value factors
Identifying areas of value- conflict, setting of priorities
Working out criteria towards decisions

Recommended Reading :

Francis C.M., Medical Ethics, I Ed. 1993, Jaypee Brothers, New Delhi p. 189.



VISION STATEMENT

The Rajiv Gandhi University of Health Sciences, Karnataka, aims at bringing about a confluence of both Eastern and Western Health Sciences to enable the humankind "Live the full span of our lives allotted by God in Perfect Health"

It would strive for achievement of academic excellence by Educating and Training

Health Professionals who

- Shall recognize health needs of community,
- Carry out professional obligations Ethically and Equitably and in keeping with National Health Policy, It would promote development of scientific temper and Health Sciences Research.

It would encourage inculcation of Social Accountability amongst students, teachers and Institutions.

It would Support Quality Assurance for all its educational programmes.

MOTTO

Right for Rightful Health Sciences Education



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